

Implementation of Auto-Free Zones: A Model

Beginning with the first American pedestrian mall to open in Kalamazoo, MI in 1958, Auto Restricted Zones (ARZs) and Auto Free Zones (AFZs) have had mixed reactions in this country. Although ARZs (of which AFZs are a subset) have been widely implemented in European and other countries, their success in this country has been limited by various barriers to implementation inherent in our systems of government, psychological attachment to the automobile, and responses to change. These barriers will be explored in this paper. Will the United States ever become as pedestrianized as Europe? Hopefully, trends in American culture will lead, if not to pedestrian facilities in every city, at least to consideration of the needs of pedestrians and other non-automobile modes of transportation in transportation planning and implementation processes.

Auto Restricted Zones are defined by Herald as geographic areas where one or more factors impose limitations on vehicular traffic [5]. These limitations may be imposed by physical, operational, regulatory, or economic measures and range from user fees and limitations on parking to complete exclusion of motor vehicles from certain streets. The latter is an example of an Auto Free Zone, also known as a pedestrian mall. Pedestrian malls consist of streets or public ways restricted to pedestrian use, and are often abutted by shopping areas, recreational and entertainment facilities [27]. AFZs or pedestrian malls can most often be found at the centers of cities, in the Central Business District (CBD), since it is at these centers that density and concentration of population make the balancing of pedestrian and vehicle requirements problematic [20].

In choosing to implement an AFZ, towns often cite the following objectives:

- To preserve and enhance the vitality of urban centers [2, 5]
- To improve the environmental quality in urban centers [5]
- To encourage the utilization of non-auto modes of transportation [5]
- To create an environment where downtown businesses may thrive and compete [2]
- To create a status symbol as a source of civic pride [2].

All of these objectives are possible results of a comprehensive urban revitalization plan [33]. However, AFZs alone do not typically cause achievement of these goals. It is essential to realize that implementation of a pedestrian mall should not be undertaken without consideration of how it fits into a more comprehensive plan which takes into account the entire city area [30, 33]. In fact, AFZs are typically only a small portion of total city area; only 15% of American pedestrian malls are more than six blocks long [27].

The following is a discussion of the implementation process and its potential barriers for Auto Free Zones (AFZs). First, a model implementation process will be presented which has been derived from the literature. Then, potential barriers to the process will be discussed, along with any expected trends in these barriers. Finally, the expected future for AFZs in the United States will be forecast.

Conceptual Framework

In considering a model for implementation of AFZs in the United States, note that there exists much variation in the literature regarding what exactly is implementation [see 26, for example]. For the purposes of this paper, implementation will encompass the entire spectrum of planning, construction, and subsequent activities related to the AFZ after the idea has been conceived and selected for further study. It will also be assumed that organizations, especially government organizations, function according to a behavioral model of policy-making as described by Lewis and Flynn [26], where decisions represent compromises between more than one political entity. Each political entity acts according to its perception of the demands of the world outside its organization and within the constraints imposed by its own organizational structure [26].

The action of the organization as a whole, then, is the sum of the actions of its individual entities. Each actor has a variety of objectives, perceptions, and personal and professional values which form his choices within bureaucratic and financial constraints [26]. The actions of the organization are likely to be incremental changes to current practices rather than large changes, and the result of the implementation process is very dependent upon individual goals of the implementers [15].

Key Players

Identification of key players and their roles in the “game” of project implementation is often crucial to the success of the project, in that it enables strategies to be appropriately chosen to gain the support or reduce the opposition of the players [14]. Implementation of AFZs, while primarily the domain of local government, is also dependent on state and federal government for funding and approval, and is also heavily influenced by non-government factions. A case study of the implementation of an ARZ in Boston noted three key players in particular [14]:

- the Mayor, whose decisions are ultimately based on his perception of public opinion, and whose goals must be congruent with the objectives of the project for it to succeed,
- the media, who sometimes functioned as the only source of information flow between government and the public, and
- community and neighborhood groups, whose influence helped to sway the positions of other factions, especially elected officials.

Other public factions which may have an interest in the implementation of AFZs are listed by Herald as follows [5]:

- Chamber of Commerce
- Downtown Merchants' Association
- Downtown neighborhood organizations
- Automobile commuters to downtown
- Transit riders
- CBD shoppers.

Agencies within government who are likely to be involved include [5]:

- City Planning Department
- City traffic engineers
- Police
- Fire Department
- Transit Authority
- Regional transportation agencies (MPOs)
- Department of Public Works
- State Department of Transportation
- Federal agencies, including DOT, HUD, etc.

The early evaluation of the potential support or opposition offered by these parties is crucial to developing strategies to build a strong base of support, and hence is crucial to project success. Therefore, in the organization phase of implementation (see below), identification and assessment of key players is a primary activity.

Strategy for Implementation in Phases

The recommended manner of implementing ARZs is a five-step phased approach [33]. Most cities which successfully implement pedestrian malls follow a similar approach [9]. Implementation phases are as follows [33]:

- Organization
- Feasibility Assessment
- General Planning
- Detailed Planning
- Operation and Monitoring.

Some implementers have found that maintaining a set of alternatives at each step of implementation, to substitute in the case of failure of the chosen alternative, contributes to the eventual success of the project [24]. A means of systematically discovering potential adverse affects of implementation and actual operation in advance is also a feature of many successful implementations [24].

Organization

The steps to effective organization for the implementation of an AFZ involve assessment of key players (see below), attempting to influence them in favor of the project and establishing networks to disseminate information about the project to these players; establishing necessary agency coordinations, perhaps by forming a Coordination and Planning Committee; and, finally, to consider the project in terms of the current policies of government organizations whose jurisdiction covers the right to establish an AFZ. If the proposed AFZ is prohibited by these policies [33] or it conflicts with the primary objectives of the implementing agency [15], it might

be wise to stop the project before it proceeds any further. It is important to establish a single locus of responsibility for the project at this point, both to coordinate the multiple players involved as well as to provide a defined entity to which public concerns should be addressed. This locus is most often a panel including representatives from each of the involved groups and may include citizens, elected officials, media personnel, agency and retail representatives [24].

Feasibility Assessment

After determining that the AFZ is not statutorily prohibited, and assessing the other players involved as well as beginning to win them over, a Feasibility assessment period should follow. Analytical methods exist for assessing the feasibility of the project in terms of direct and indirect benefits and costs (e.g. see [29]). The potential for an AFZ should be determined by examining current local conditions, establishing a set of objectives which will govern evaluation of alternatives, generating and evaluating possible ARZ schemes as alternatives, and recommending alternatives according to evaluation in terms of objectives. This phase should also include active information dissemination to key players, as well as information gathering from many of the key players who are anticipated users of the mall area (both shoppers and merchants).

General Planning

After determining that the project is feasible for the area considered and that it has at least a chance of success given the positions of the key players, a general plan for implementation should be developed. The general plan should consider current conditions at the proposed site, including pedestrian flows, transit routes and volumes near and in the affected area, and anticipated access and utility requirements. Preliminary assessment of financing options (see below) should also begin in this phase. An evaluation of the environmental and economic impacts should be performed. Revised circulation patterns should be generated, and basic project design concepts should be determined and fixed. A conceptual estimate of total project cost and duration should be calculated at this point. Management and maintenance requirements should be considered, and a plan for their execution should be begun.

Detailed Planning

If the project still seems feasible after developing a general plan, a detailed plan for the project should be produced. The detailed plan should include construction drawings and specifications to be submitted for the necessary agency reviews and approvals, then put to bid. A construction management program should be developed now, if not during the general plan development. Final arrangements should be made to secure financing of the project. A baseline schedule should be developed according to the detailed plans, and modified as necessary to allow consideration of user and merchant interests determined in the feasibility phase. A program to promote the project should be developed, and promotion should begin. After the detailed planning of the project is complete, construction according to the detailed plan should commence.

Operation

After the project has been constructed, the Operation Phase commences. At this point, systems for zone management and maintenance should be implemented. The marketing and promotional program should be continued, and the monitoring and evaluation system should begin to provide feedback from users and other affected parties. Modifications of the project should be made to reflect feedback from the evaluation system wherever possible. An explicit evaluation mechanism is crucial to the success of the project, and should provide information for decision makers regarding what effects result from the project as well as why they are felt [24].

Financing: Diverse Opportunities

While opportunities for financing of ARZs are diverse and come from all levels of government and private interests, often finding reliable sources of funding can be a significant barrier to implementation (see below). Financing of initial project development and construction is usually funded by government agencies, and is often carried out without considering the potentially significant operation and maintenance costs which are associated with the completed facility throughout its life. Some sources for financing ARZ projects are listed by category of source as [24, 33]:

Private:	Special Assessment District Indirect Special Assessment District Voluntary Assessments Gifts and Donations
Local Government:	Maintenance and Improvement Funds General Revenue and Capital Bond Issues Motor Fuel Tax
State Government:	Highway Grants Public Transit Grants Redevelopment Grants
Federal Government:	Urban Renewal Funds Beautification Programs Public Works Programs Demonstration Grants
Other:	Civic and Downtown Associations Special Corporations and Authorities Private Utilities

Success: A Working Definition

Measures of the success of implementation of AFZs and pedestrian malls are varied. Many measures are possible; however, measures typically used in the United States relate to improvements in the retail activity which occurs in CBDs, including reduction in vacancies [27, 32], increase or stabilization of tax base and retail sales [7, 22, 32], notable changes in shopping patterns and retail expansion [27], and voluntary improvements to privately owned space [5, 27, 32]. Repeatedly emphasized was the fact that often the success of pedestrian malls had to be measured by the degree to which it arrested and stabilized retail declines, rather than the amount by which it improved retail sales [7]. Moreover, some studies noted that while net retail sales for an AFZ tended to improve slightly, particular types of stores seemed to suffer. These stores (e.g. paint stores, parts stores, and liquor stores) tend to be incongruous with the idea of a mall as a leisure area for recreational shoppers [27].

Other measures of success of AFZs and pedestrian malls are the degree of improvement in air quality and noise reduction [18], cleanliness [27] and reduction in vandalism and littering [22], improved transportation and land use efficiency [18], greater use of transit [5], and enhanced civic image and optimism [5, 22]. Measures of success for which Germany is noted pertain to the degree of amenity provided by the area, increased attractiveness of the area for leisure, and increases in the number of residences located within the center city [32]. No matter which measure of success is utilized, however, it is important to assess the impacts of the AFZ on the entire system which it affects in order to obtain an accurate picture of the overall success of the AFZ in terms of the objectives of the comprehensive city plan [22].

Features of Successful Implementations of ARZs

Most successful implementations of auto-restrictive measures have included timely public involvement in developing the implementing the ARZ policy, with public access to project information and ample opportunities to express concern and provide constructive suggestions. However, success was based on the reasonable consideration of such suggestions and actually responding to public and user concern with changes in project implementation and operation [24]. In addition, many studies noted that the success of ARZs hinges on concurrent improvements in access to the area and parking in surrounding areas [30, 5]

Factors found by one case study to encourage the successful implementation of ARZs were the presence of high levels of downtown traffic congestion, the presence of or potential for downtown transit service, and a highway system which was difficult to expand [23]. Other authors noted that obvious pedestrian-vehicle conflicts tend to sway many key players to favor ARZs [22, 5]. Other encouraging factors were the presence of historical districts in the proposed AFZs or severe atmospheric inversion conditions which would encourage auto restriction for its local pollution mitigation effects [28].

One study found that the success of a pedestrian mall appears to be independent of city population and of actual mall size, but is related more to thorough project design and the philosophy of those who direct the implementation [27]. Indeed, AFZs are rarely successful unless their implementation clearly serves the interests of the primary decisionmaker, who is

generally an elected official with concern for public interests [25, 15]. Finally, most successful implementations of AFZs in this country had (or obtained) the involvement with and support of government, business, and citizens for the project. More importantly, those who did not have this support or could not get it, generally failed in their implementation.

Barriers to Implementation

Barriers to implementation of ARZ and AFZ projects are widespread, ranging from psychological barriers associated with perceptions of mobility to institutional inertia, to statutory prohibition of such projects. While implementation barriers are specific to each particular implementation [26], some problems seem to plague projects in general. One survey yielded five problems mentioned with significant frequency by implementers of American pedestrian malls [9]. The most frequently mentioned problem was in raising funding for the project. Other significant problems were in acquiring land for the project, agreeing on a plan, coordinating participants, and anticipating economic change. In general, implementation barriers can be divided into six types of problems [5]:

- Problems with consensus-building
- Problems with interagency cooperation
- Resistance to organized change
- Incompatibility of plan with organizational objectives
- Problems with public participation, and
- Legal considerations.

In the following sections, each of these potential barriers will be examined and potential strategies for overcoming them will be presented.

Problems with Consensus-Building

This barrier to implementation was described in an earlier example as difficulty in “agreeing on the plan.” The nature of auto restriction projects is to involve many key players (see above). Consensus-building becomes more difficult as the number of independent decision makers increases [21]. Overcoming this barrier requires dealing not only with those who prefer the status quo, but also those with active reasons to oppose the project.

As demonstrated in a case study of Boston, the reluctance of key decision makers to take a proactive stance increased the time and effort required to build a strong constituency to support the project [14]. Consensus is also necessary to make formal commitments to projects, especially in fiscal terms. For example, fiscal incentives such as free buses and modifying construction schedules to avoid peak retail periods may be essential to insure the success of an AFZ, but such commitments cannot be offered without consensus among key decision makers [24].

The “collective or public good nature of the benefits” of ARZs also contribute to difficulty in consensus-building [16]. People are more likely to actively support projects which they believe

offer selective benefits [], but the nature of ARZ projects is to be for the common good, making active support less likely and contributing to the “fragility” of auto restraint policy [21].

Overcoming this barrier requires converting opposition to support or rendering them neutral or silent [14]. Lloyd and Meyer [14] discuss several tactics to build consensus and support for ARZ projects, including winning support based on the merits of the project, using “trusted emissaries” who have benefited from similar projects, trading favors, and “taking no prisoners.” The reader is referred to [14] for further discussion of these tactics.

Problems with Interagency Cooperation

The difficulty of implementing something increases as the number of parties required to cooperate or contribute funds increases [21]. ARZ projects require the commitment and coordination of resources from multiple key players to be successfully implemented [16]. Moreover, there often exist clashes between the goals and objectives of different agencies and with the objectives of the project itself [25]. Since implementation according to the behavioral model is affected by individual behaviors, the personal values and professional beliefs of individuals may also inhibit coordination [21]. Meyer emphasizes in [15] that intergovernmental relations are crucial to the success of a proposed idea, and that these relations are often made difficult by conflicting agency goals and differences in perception of an issue by different players. Especially in ARZ projects, cooperation between city planners and traffic engineers is essential [24].

If the objectives of an ARZ project conflict with the goals of the implementing agency or with those of local leadership, the most effective option is to realize early that the project has little likelihood of success and to abstain from pursuing it [5]. Differing priority of objectives, while possibly causing inefficiency and misunderstandings in implementation, does not necessarily mean that implementation is impossible [25]. Awareness on the part of project implementers of the differing priorities of the factions will make the project execution smoother, and allow compromises to be made.

Resistance to Organizational Change

City planning, and urban and transportation design has been primarily “automobile-oriented” since World War II [18]. Even now, despite many legislative and other efforts to expand the world of transportation to include more than the automobile, there still exist many planners, engineers, and politicians in government organizations who are auto-oriented [5, 17]. Indeed, an estimate of subsidies to motor vehicle use yielded a range from \$4.50 per gallon of gas used to greater than \$100 per gallon under worst case conditions [19]. To realize a society where the interests of non-automobile modes of transportation are considered on a more equal footing, these organizations must make significant changes in their current policies and objectives [17]. Institutional inertia and status quo supporters will require time to be overcome, but with the increased emphasis of multimodal transportation in the training of new engineers and planners, the auto-orientation of many organizations is gradually changing.

Other resistances are sometimes encountered when organizations are required to redistribute their resources to include support for ARZ facilities [5]. This redistribution is on a scale which is proportional to the size of the ARZ, and can often be accomplished by creating temporary task forces to perform the planning and construction of AFZs. However, the monitoring, operation and maintenance activities are ongoing requirements and as such require permanent redistribution of resources. The most effective means of dealing with this problem is to distribute the resource requirements among the agencies involved, thus minimizing the requirements to each [5].

Incompatibility of Plan with Organizational Objectives

This implementation barrier shares many characteristics with the requirements of interagency cooperation. In addition to those requirements, however, the ARZ plan should be compatible with the comprehensive plans for the areas in which it is located. ARZs should not be conceived as a “quick-fix” for urban revitalization, but as a single component of a larger plan [30]. Furthermore, “official” acceptance of the ARZ should be possible, given the current constraints of policy and statutes [5]. The issue of zoning is of particular importance for this barrier.

Current trends in zoning encourage or require single land use of zoned areas, with exceptions requiring special effort to obtain a ruling for the modification. This type of zoning is inherently incompatible with the principles of pedestrianization, which is most effective in areas of mixed land use [5, 32]. The typical American is willing to choose walking over another mode of transportation for distances less than 1/4 mile, barring adverse conditions. (interestingly, Europeans have a threshold which is about twice as great) [35]. With single land use zoning, the pedestrian is often unable to get out of his residential zone in 1/4 of a mile, not even considering the often adverse pedestrian conditions in such areas [8]. Zoning practices must change if pedestrian facilities are to be encouraged in the United States. Mixed land uses which encourage denser residential population around AFZs have been demonstrated as a factor in the success of German AFZs [32]. Zoning could also be executed at the regional level to enable the hindering of suburban malls which may detract from the success of the CBD pedestrian malls [2].

Problems with Public Participation

Public participation, while essential to the success in planning, implementing and sustaining AFZs [22], is often lacking due to poor public awareness of the benefits of AFZs [25], as well as the fact that by nature they are not selective or direct in the benefits they proffer [23]. The nature of the public is to react defensively, responding more to threats or perceived threats than to opportunity [21]. Hence, AFZs, which seem to threaten mobility [18], retail stability [5, 16], and personal freedom [5], often engender vociferous opposition. The number of people who will directly benefit in the short term from ARZs are limited to groups such as taxi and transit operators and residents seeking to ban cars from neighborhoods, and these people are unlikely to form a substantial base of support for the cause [21]. Although there may be many people who are “passive sympathizers” to the benefits of ARZs, inspiring them to active support is very difficult [21].

Measures should be taken to eliminate misconceptions about ARZs through the use of public meetings and information distribution. Allowing and encouraging the public to actively participate and offer creative suggestions may also help to motivate the public. Measures such as the “trusted emissary” approach [14] may also be used to improve public perceptions of the project.

Legal Considerations

Legal considerations present barriers to implementation in the form of restrictive statutes and ordinances (discussed above), as well as in the jurisdictional authority to approve and implement ARZs [21]. Federal regulations for public hearings and environmental impact assessments may impede the design and development process [16]. Issues of easements and the rights of property owners who are affected by the proposed ARZ must be considered. For example, does the right of access to his property of an owner include the right to access it with vehicles? Should damages be awarded to businesses whose sales decrease after pedestrian malls are implemented? Who “owns” the ARZ if it is partially subsidized by private funds, and who is liable for injuries which occur in the facility? These issues are explored in the case law, and vary from site to site. However, awareness of the potential legal issues should enable implementers to take steps to mitigate the liability of all parties involved in implementing ARZs.

Conclusion

The implementation of Auto-Free and Auto-Restricted Zones depends heavily on organizational issues for its success. Perceptions (both accurate and inaccurate) of the costs and benefits of ARZs contribute to the actions of the key players involved in implementing such projects. Improved information from existing ARZs along with change in organizational goals and policies to reflect the importance of non-auto modes of transportation will contribute to the future success of ARZ projects. In addition, future trends of increasing population density and active support of environmental concerns will help to promote the cause of pedestrianization, both in center cities and suburbs.

Finally, the following argument is presented from a paper by Hamel [18]:

“No one would deny that every citizen has the right to travel, but nowhere is it written that travelers are each entitled to bring with them over three thousand pounds of metal.”

AMEN!

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