

Abridgment

Transit Services in Coastal Recreation Areas

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In recent years, there has been considerable interest in the provision of transit services at coastal recreation sites. Despite this interest, and a number of local experiments in providing such services, there has been little previous study of the role of transit in coastal recreation areas. The results of a nationwide survey of planning agencies and transit operators conducted to gather information about existing (and recently discontinued) coastal transit services are reported. Results include information about the relation between recreation-site characteristics and the type of service offered, design characteristics of coastal transit services (route structures, fares, headways, etc.), operating results (ridership, costs, and revenue), and commonly encountered operational problems. Quantitative information about some of these items is difficult to obtain and does not form a suitable basis for generalization; however, it is possible to identify, in qualitative terms, some of the factors that contribute to the success or failure of coastal transit services and some of the operational problems characteristic of them.

In recent years, there has been considerable interest in the provision of transit services in coastal recreation areas, especially at heavily used beaches or in surrounding commercial development. Such interest has been expressed by the National Park Service, various state park systems, agencies involved in coastal zone management (including the California Coastal Commission), state departments of transportation, and numerous local governments, planning agencies, and transit operators.

This widespread and diverse interest in coastal transit services has led to considerable experimentation in the provision of specially designed services. Despite this interest and experimental activity, however, there has been little systematic study of the role of transit in coastal areas. Although there have been a number of planning studies that have dealt with transit access to coastal areas (1,2) and a few studies related to demand for transit services at specific sites (3-6), there has been no previous attempt to study the overall phenomenon of coastal transit service. As a consequence, agencies interested in providing such services are often unaware of what has been attempted elsewhere and may have unrealistic expectations.

In an attempt to provide an overview of transit activity at coastal recreation sites in the United States, the California Sea Grant Program and the California Department of Transportation have funded a study whose primary objectives are (a) to determine conditions conducive to the success of coastal transit services and (b) to develop planning guidelines for such services. This paper reports on a national survey of existing (or recently discontinued) coastal transit services that was carried out as a part of the first year of that project. Further details are presented elsewhere (7,8).

COASTAL TRANSIT SURVEY

The survey of existing coastal transit services was conducted in two phases. The first phase was intended to establish the geographic distribution of coastal transit services, and the second phase was intended to determine their design features and operating results and to provide a preliminary idea of the factors that contribute to their success or failure.

In the initial phase of the survey, letters were sent to approximately 125 planning agencies and transit operators representing 64 coastal areas (including the Great Lakes). Although most of these

were urbanized areas, queries were also sent to several rural public transportation operators in coastal areas. In addition, members of the American Association of State Highway and Transportation Officials Standing Committee on Public Transportation and/or other state officials from 28 coastal and Great Lakes states were contacted.

Responses were received from 34 of the 64 areas contacted; in addition, state contacts reported coastal transit services in four areas that had not been directly contacted. Of the 38 coastal areas for which responses were received, 33 reported that there either were then or had previously been transit services at coastal recreation sites in the area. Subsequently, a few additional contacts were established, which brought the total number of areas involved in the second phase of the survey to 35. These 35 areas reported a total of 87 separate coastal transit services.

In the second phase of the survey, follow-up letters, telephone calls, and personal visits to transit operators, planning agencies, and local officials were used to gather additional information about the services reported in the first phase. The information sought included characteristics of recreation sites, institutional arrangements, design characteristics of services (routes, fares, schedules, etc.), and operating results (ridership, costs, and revenue).

RESULTS

Types of Service

A number of different types of transit services were reported in the survey. These may be classified as follows:

1. Regular fixed-route services are year-round services that are part of multipurpose transit systems. Bus, rail rapid transit, and commuter rail services are included, although most such services use buses.

2. Special fixed-route services are usually seasonal services and in some cases are operated by agencies other than regular transit organizations. They include access-oriented services, which provide seasonal express service between urban areas and remote recreation sites 5-25 miles away, and circulation-oriented services, which provide service parallel to the shore in densely developed resort areas.

3. Shuttle services connect remote parking lots or trunkline transit services with recreation sites.

4. Group services, which include private tour services, cater primarily to organized groups and tend to provide tour services (for instance, guides) as well as transportation.

5. Special-event services are temporary services designed to provide transportation to special events (fairs, festivals, sporting events, etc.) held at coastal recreation sites.

6. Other services sometimes found in coastal recreation areas include ferries, special intercity services, and dial-a-ride services.

Regular fixed-route services were the most commonly reported type (40 of 87 operations), followed by special fixed-route services (15), shuttles (12),

and group services; however, most of the group services were private tour services for which little detailed information was available.

Site Characteristics

The survey sought information on a variety of site characteristics; in most cases, little detailed information was available. It is possible, however, to classify sites in qualitative terms and to determine some rough relations among site characteristics and the types of services typically present. The most important distinction seems to be between sites frequented primarily by overnight visitors (resort communities) and those that experience primarily daytime use. Among day-use sites, a distinction is also made between those located contiguous to urban or suburban development (such as the New York City and Southern California beaches) and those located some distance away from the urbanized area.

In general, urban and suburban day-use sites are served by regular local transit operators as a routine part of their system; more remote day-use sites are often served by specially designed seasonal services, which usually involve fixed-route express service. In both cases, service at day-use sites is primarily designed to provide access to the shore from inland areas rather than movement along the shore.

Resort communities, on the other hand, are often characterized by dense commercial development along the shore. Overnight visitors make numerous trips within this coastal strip, which results in traffic congestion and uncertain availability of parking. Transit systems in resort communities tend to be specially designed fixed-route systems that run parallel to the shore, intended primarily to provide circulation within the coastal commercial strip.

Shuttle systems are of two types: those that connect trunk-line transit services with recreation sites (transit shuttles) and those that serve remote parking lots (park-and-ride shuttles). All of the transit shuttles reported in the survey are located at remote sites near New York and Chicago and connect with commuter rail services. Park-and-ride shuttles have been attempted at congested urban and resort sites and at a few remote sites where parking is not available in the immediate vicinity of the shore.

System Design and Operating Characteristics

The survey sought rather detailed information concerning the design and operating characteristics of the various types of coastal transit services. The results are summarized below.

Regular Fixed-Route Systems

The regular fixed-route systems reported in the survey varied a great deal in terms of city size and degree of involvement in the provision of coastal services. For the most part, the characteristics of coastal routes appear to be similar to those of non-coastal routes in the same region. A wide range of headways and fares was reported. The most frequently reported headways were 30 and 60 min; the most frequently reported fare was 50¢, although most of the very large systems involved (New York, Chicago, Los Angeles, etc.) have fares in the 75¢-85¢ range.

Information concerning ridership, cost, and revenue was rarely available on a route-by-route basis. Reported information suggests that for coastal routes of regular systems annual ridership ranges from 24 000 to 20 000 000 and most have an annual ridership in excess of 100 000, that vehicle-hour

costs range from \$28 to more than \$50/bus-h, and that operating ratios range from 0.20 to 0.50. These figures mean little in themselves, but they do provide a useful standard of comparison for specially designed systems.

Several operators of regular transit systems, particularly in the larger cities, reported that there are certain operational problems commonly associated with coastal routes. These problems, which include overloading of vehicles and difficulty in controlling headways, stem from traffic congestion, demand-peaking patterns, and, in a very few cases, long and unpredictable loading times caused by carrying passengers with items such as bicycles and surfboards. The most common approach to dealing with these operational problems is to use field supervision and assignment of extra service, usually from a systemwide pool of vehicles and labor. Instabilities caused by long loading times are usually avoided by transit systems refusing to carry passengers with bulky items of equipment, even though this probably does reduce demand.

Access-Oriented Services

Access-oriented services are usually seasonal services that operate express service over fairly long routes. As a result, costs and fares tend to be somewhat higher than those of other coastal services and frequency of service and ridership (especially annual ridership) are comparatively low. Financial performance is quite variable: Operating ratios range from 0.02 (for a service carrying senior citizens and youths at special fares) to 0.80.

Circulation-Oriented Services

Circulation-oriented services reported in the survey display considerable variation in their headways, costs, and ridership; fares, however, tend to be low and fairly uniform. These systems are usually quite simple, consisting of a single route parallel to the shore. Because they operate in a congested environment, they experience the same sort of operational problems as coastal routes of regular systems in large urban areas; however, none of the systems reported is large enough to attempt sophisticated means of counteracting instabilities in headways and vehicle loads. Because they operate in resort areas that have low wage rates for seasonal labor, the costs of the circulation-oriented systems tend to be quite low; nevertheless (due to low fares and large variations in demand), financial performance is quite variable: Operating ratios range from 0.10 to 0.80.

Shuttle Services

The characteristics of shuttle systems vary considerably, depending on their type. The transit shuttles reported appear to be successful; however, they do have fairly high costs per passenger, and there appear to be few locations where they would be appropriate. Park-and-ride shuttles have performed well where there was no parking in the immediate vicinity of the shore; where parking was available but congested, their performance has been marginal, with a number of failures (due to extremely low ridership) and only one clear case of success. Headways for shuttles tend to be in the 15- to 30-min range; fares tend to be low, and a number of systems offer free service.

CONCLUSIONS

The coastal transit survey provides the basis for

several general conclusions concerning coastal transit services. These include the following:

1. Transit service at coastal recreation sites is a fairly common phenomenon. Of the 50 coastal urbanized areas in the United States, at least 28 have some kind of transit service at one or more coastal sites; in addition, the survey uncovered 7 nonurban sites. Among the larger coastal urban areas (with populations of 500 000 or more), approximately 75 percent reported coastal transit service.

2. The bulk of transit access to coastal recreation sites is provided by regular transit routes in urban and suburban areas. With the exception of a few characteristic operational problems, these routes appear to be similar in design and operating results to routes in noncoastal portions of the same metropolitan areas.

3. Specially designed coastal transit services display a wide range of design and operating characteristics. This was to be expected, since many of them are experimental in nature. With the possible exception of park-and-ride shuttles in areas in which parking is available in the immediate vicinity of the shore, all types of service reported in the survey can be successful under the right conditions.

The coastal transit survey was intended to identify factors that contribute to the success of coastal transit services and thus serve as a basis for planning guidelines. In these terms, it must be considered a limited success. Although it is not possible to make generalizations about quantitative matters such as the relation between beach use and transit ridership under any particular set of circumstances, it is possible to make qualitative judgments about the factors that contribute to the success of coastal transit services and to identify some of the more important planning and operational issues. This information should contribute to more effective planning of transit services in the coastal environment.

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REFERENCES

1. San Diego Coastal Access Study. Comprehensive Planning Organization of the San Diego Region, San Diego, CA, 1978.
2. Golden Gate Recreational Travel Study: Summary Report. Metropolitan Transportation Commission, San Francisco, 1977.
3. K. I. Kuperstein. Recreational Travel Behavior of Visitors to the Gateway National Recreation Area: Results of the User Survey. Department of Civil and Environmental Engineering, New Jersey Institute of Technology, Newark, 1978.
4. J. Burke. Recreation on the California Coast. Presented at Coastal Zone '78, San Francisco, 1978.
5. J. Burke. Coastal Access, Energy Conservation and Comprehensive Planning. Presented at Sea Grant Forum on Recreational Access to the Coastal Zone, San Francisco, 1979.
6. C. A. Heatwole and N. C. West. Beach Use and User Constraints in the New York Coastal Region. New York Sea Grant Institute, Albany, NY, Rept. Series 80-01, 1980.
7. J. H. Banks, F. P. Stutz, and I. Jabbari. Coastal Options and Policy. Center for Marine Studies, San Diego State Univ., San Diego, CA, California Sea Grant Interim Rept., 1982.
8. J. H. Banks and F. P. Stutz. Coastal Transit Service and Environmental Management. Proc., Applied Geography Conference, Vol. 4, 1981.

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Emerging Public-Private Partnership in Urban Transportation

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The private sector has been an important actor in local transportation decision-making for many years. However, in recent years, the business community and large employers have begun to take a more aggressive role in identifying transportation problems and implementing programs to solve them. Joint efforts of the public and private sectors in several urban areas are examined. These cases show that successful public-private action can be directly related to the ability of a small group of people, in both public agencies and private firms, to work together; an understanding of the motivation of private firms; the commitment of top management in both public and private agencies; and careful identification of the expectations of program operation. It is concluded that increased private-sector involvement in urban transportation will significantly influence the politics of transportation decisionmaking, the program implementation process, the focus of transportation planning, and skills required for

transportation professionals. In addition, a number of questions are raised regarding equity.

World and national events of the past seven years in relation to the supply and cost of petroleum have resulted in a need to evaluate carefully traditional forms of transportation and, perhaps more importantly, to examine closely the institutional relations that have guided transportation planning for many decades. One of the most important characteristics of the emerging urban transportation planning system is the increasing role that the private sector is