The Entrepreneurial City

Innovations in Finance and Management for Saint Paul

Kevin Neels, Michael Caggiano
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The Entrepreneurial City

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Kevin Neels, Michael Caggiano

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PREFACE

This report presents the results of an 18-month cooperative venture between the staff of The Rand Corporation and the employees and citizens of Saint Paul, Minnesota. Severe financial difficulties in the early 1980s led the city to invite a team of Rand analysts to make a fiscal diagnosis and prepare a remedial-action agenda. That agenda, on which this report concentrates, calls for benefit-based financing of city services and the creation of new municipal organizations called Revenue Centers. As part of the project, two pilot Revenue Centers were to be established to provide demonstrations and “field tests” of the concept.

Although this report is aimed specifically at the city of Saint Paul, the concepts and approaches outlined here should be of interest and utility to many cities, counties, and towns around the country. Many municipalities have increased their reliance on fees and charges. Many thoughtful officials have begun to ask what this change may mean for the way their cities should be managed. The practical experience of Saint Paul in wrestling with these problems should help these officials to formulate solutions that are responsive to their own needs and circumstances.

Other, related research is reported in the following Rand publications:


SUMMARY

The city of Saint Paul, Minnesota, has experienced chronic financial difficulty for the past several years. Between 1976 and 1982, inflation pushed up costs faster than revenues, eroding the city's buying power and forcing a series of painful service and staff cutbacks. Employees' real wages fell. If the city continues its current fiscal practices, the future will be no better than the recent past. Without new sources of revenue, the city faces growing annual deficits that could reach $8 million in 1988.

Although reductions in real wages of city employees, service cuts, and property tax increases could balance the budget in 1988, they would not be a permanent solution. Because of a structural imbalance between costs and revenues, Saint Paul's costs, driven by inflation, will routinely grow more rapidly than its revenues. This report examines a long-term solution to this problem superior to service cuts and layoffs. It describes a more entrepreneurial city, with new, more responsive revenue sources and new organizational structures for service delivery called Revenue Centers.

Revenue Centers are explicitly designed to treat citizens not as clients, but as customers. They are intended to broaden the city's revenue base and respond to the demands of service consumers. Beneficiary charges—payments made by consumers for specific city services—are the fuel that runs Revenue Centers. Their increased use can lead gradually to the development of nontraditional sources of funding, including enterprise income, revenue ventures, and moneymaking sidelines. Ultimately, these processes could increase Saint Paul's self-reliance and reduce the structural imbalance between costs and revenues. At the same time, Revenue Centers would increase both opportunities and incentives for improved cost management. By making the full costs of providing services visible and encouraging a bottom-line orientation, Revenue Centers could foster improved efficiency in service delivery.

PRICING PUBLIC SERVICES

Beneficiary charges levied by the city for services lie at the heart of the Revenue Center concept. However, not all city services can or should be financed by beneficiary charges. Charges for public good services, like police protection, that provide benefits to the public at large,
are neither feasible nor appropriate, since it is impossible to isolate the advantages that each individual receives from them. True public goods should be funded out of general revenues, not beneficiary charges.

But some form of beneficiary charge may be both possible and desirable for other city services. The benefits of private good services, such as the use of municipal golf courses, accrue solely to the specific consumers of the service. In a city experiencing financial problems, Revenue Centers should provide these services only if the charge to the consumer covers full costs, including direct costs, capital costs, and appropriate shares of administrative and overhead costs. Failure to recover full costs means that the city is using general revenues to subsidize particular individuals.

Merit good services are like private good services in that they are generally consumed by identifiable individuals. But they are like public good services in that the benefits spill over into the community at large. Inoculation against communicable disease is a good example. Direct consumers of a merit service should be charged a portion of the full cost commensurate with the benefit received. The remainder should come from general city revenues. However, it is very difficult to define the size of the private and public shares of merit good services. Planners must determine who benefits from the service, how necessary it is, and how feasible a charge might be.

In charging for city services, care must be taken to reduce potential adverse impacts on the poor and the disadvantaged. Revenue Centers would provide essential services such as police protection to all members of the community without a direct charge. They could offer special discounts to the poor and the elderly for responsive services, such as the use of recreational facilities. Access to city services could be enhanced by a voucher system, financed out of General Fund revenues, that would help disadvantaged groups purchase any number of responsive city services.

REVENUE CENTERS: THE FRAMEWORK

Like the leader of a profit center in a large corporation, the Revenue Center manager would be encouraged to pay close attention to the Center's financial bottom line. Unlike traditional city departments, Revenue Centers would be encouraged to generate end-of-year surpluses by developing new revenue sources and improving the efficiency with which services are produced. A portion of the surplus would be paid back to the General Fund through an internal tax that would help alleviate the city's financial problems and would repay the city for the
use of its resources and nonprofit status. The tax would have to be set low enough that it would not destroy the incentive to generate surplus funds, a portion of which could be made available for funding merit pay increases or special training courses for the employees responsible for the surplus. The Revenue Center itself should keep a majority of the surplus to build up working capital reserves, buy equipment, or use as seed money for new ventures.

Revenue Centers would provide both public and private services—the former financed from general revenues, the latter from user charges and other forms of benefit-based finance. Employees would be encouraged to develop sources of revenue, contain the cost of providing city services, preserve the city’s capital assets, and economize on the use of city support services. To do this, the Revenue Center’s accounting structure must give its manager total operational control. All revenues generated as a result of Revenue Center activities, including user charges, enterprise funds, and state and federal government grants earmarked for a use that falls within the purview of the Revenue Center should be available to the Revenue Center budget. Full costs, including the costs of support services, fringe benefits, and capital assets should be charged to the Revenue Center’s budget. Accounting for all costs and revenues automatically leads to more efficient use of resources.

If General Fund support for a Revenue Center is seen as a bailout of any and all losses, the positive incentives inherent in the Revenue Center approach will disappear. Therefore, instead of receiving General Fund support as a residual payment, Revenue Centers should enter into explicit agreements with the central administration. In this kind of agreement, which we call “contracting in,” the central administration specifies an amount of funding it will provide in return for a specific level of essential services. For mixed services that have both a public and a private component, the central administration provides the money to pay for the public component of the service. The Revenue Center must guarantee that the agreed-upon level of essential service is actually provided. The agreement must preserve the incentives for innovation by assuring employees that they will share in any surplus they generate; and it must remain flexible enough to allow for adjustments to changing circumstances or unavoidable revenue shortfalls. Any change in General Fund support should be linked to a redefinition of the services to be provided. The agreement should cover several years and should be renegotiated from time to time to reflect any productivity gains that have been made. If managers and workers prove they can perform on a sustained basis at a higher level than before, then eventually some of the savings they generate should be returned to the General Fund through reductions in the funding it provides to the Revenue Center.
Revenue Centers would decentralize city government authority, giving middle-level managers more control over what they produce and how they produce it. Accountability would be preserved through Mayoral and City Council approval of the Revenue Center's budget and statement of objectives, the market forces that would come to bear on the Center, and the "contracting-in" agreement. Although the Revenue Center would have a great deal more freedom then other city divisions, ultimate authority would still rest with the Mayor and the Council.

City workers play a key role in the Revenue Center. They would be asked to help raise productivity and to take responsibility for defining the goals and responsibilities of their jobs. They should be part of regular "brainstorming" sessions with managers to share ideas on how to meet the needs of their clientele. In return for their cooperation, Revenue Center employees should enjoy a more stable and satisfying work environment.

Revenue Centers will need a personnel system that functions in a timely manner, matches the right employees with the right jobs, and provides opportunities for growth and advancement. Developing these capabilities in Saint Paul will require a number of changes in the present system, including broader job descriptions, more flexible selection criteria, better interdepartmental mobility, and expanded employee training and career development. The Personnel Issues Task Force in Saint Paul is currently working on these and other issues.

A number of discrete steps are necessary to implement the Revenue Center concept. They include:

- Defining the service responsibilities of the Revenue Center.
- Developing an inventory of the Revenue Center's assets.
- Preparing the Revenue Center's budget.
- Drafting the Revenue Center's charter, including the "contracting-in" agreement.

Revenue Centers should provide an environment conducive to effective management. Within broad bounds, the authority to manage both revenues and resources are given to the Centers, within a structure that rewards superior performance. This new environment should encourage interest among managers and workers in the city's ongoing efforts to improve performance and accountability and increase the likelihood that good management practices will take hold and spread.
PILOT REVENUE CENTERS

We applied the general concepts outlined in this report to two pilot Revenue Centers in Saint Paul, one in the Division of Traffic and Lighting, and the other in the Division of Parks and Recreation. They would provide both public and private services and they would draw their funding from a mixture of own-source and General Fund revenues. Each would contain the potential for initiating new revenue ventures. The Division of Parks and Recreation’s new revenue ventures could eventually be lucrative enough to wean it from General Fund support. The Traffic and Lighting Revenue Center would continue to receive General Fund support, but at a substantially reduced level.

The appendixes describing the pilots contain outlines of the services each pilot Revenue Center will provide. Also examined are the Revenue Centers’ full costs, including both operating and capital expenses, and the sources of revenue that the Centers will develop and draw upon. Each appendix forecasts the new Revenue Center’s 10-year costs and revenues.

The conversion to Revenue Centers should produce favorable results: Through a combination of new charges and fees, the Traffic and Lighting Revenue Center could raise an additional $80,000, and an equal amount from new ventures (e.g., selling advertising space on parking meters, and providing meter and light-fixture maintenance for other jurisdictions). The Center’s most important source of new revenues, street-lighting service charges, could cover the full cost of street lighting at a charge to the average homeowner of about $2.00 per month, with disadvantaged citizens protected by a deferred payment plan. In total, the new Traffic and Lighting Revenue Center could reduce annual general revenue requirements by almost $2.5 million.

The Parks and Recreation Revenue Center could undertake construction of a large, inflatable fabric dome over its softball diamond that would convert the Municipal Athletic Facility into a year-round sports complex. Within five years, revenues generated by new winter programs could finance all of the facility’s summer operations and make the Revenue Center completely self-sufficient.

CONCLUSIONS

The Rand-Saint Paul project should result in some significant changes in the way the city conducts its business. Of necessity, the job of making these changes falls on the citizens, workers, managers, and elected officials of Saint Paul. In a very real sense, the job is just beginning.
The ideas discussed in this report could bring about a substantial improvement in the city's financial position. But the potential benefits extend well beyond the two pilots. By encouraging a more entrepreneurial style of management, Revenue Centers could tap more of the city's true revenue potential.

Revenue Centers could provide similar benefits to many cities and counties around the country. The growing importance of user charges and other forms of benefit-based finance as a source of revenue places new responsibilities and demands on local governments and their managers. Revenue Centers are designed not only to accommodate the shift toward user charges, but to manage this change in a way that provides financial benefit to the city while responding to the needs and concerns of the citizens who consume city services.
ACKNOWLEDGMENTS

Many people contributed to this report. Its authors gratefully acknowledge the help and suggestions they received from colleagues at Rand and from the citizens, employees, and elected officials of Saint Paul.

Carol Hillestad, Peter Rydell, and Mark Boyce at Rand contributed to the work reported here and deserve credit for their time, efforts, and ideas. James Stucker and Warren Walker, although not directly involved in the work, participated in many discussions and offered us the benefit of their intelligence, knowledge, and experience. Brent Bradley and Kevin McCarthy reviewed a draft of this report and contributed perceptive comments that enhanced the final product. David Lyon, Vice President in charge of the Domestic Division at Rand, lent his active support to the project. We would especially like to acknowledge Judith Fernandez, whose work is highlighted in the Introduction, and Anthony Pascal, whose insights helped pilot the project from its inception.

The people who directed the Rand-Saint Paul project deserve more praise and credit than we have room here to give. The time and attention provided by Peter Hames, Susan Job, and Ronald Kline were invaluable to us. Their knowledge of the city and their insight into the practical problems of municipal finance and management contributed immensely to the quality and utility of our work.

Many thanks are due to the Saint Paul employees and managers who shared their thoughts and ideas with us, including Gregory Blees, Thomas Kelley, Donald Nygaard, Robert Piram, Kathleen Stack, Gerald Steinberg, and Robert Trudeau.

In preparing the pilot Revenue Center proposal for Parks and Recreation, we benefited greatly from the help of Judy Barr, Roger Goski, Gerald Prill, and Victor Wittgenstein. In working on the Traffic and Lighting proposal, we were aided by the contributions of Thomas Eggum, John Jansky, Donald Sobania, and Robert Roettger. We look forward to returning to Saint Paul some day to see Revenue Centers operating in their capable hands.

The Responsive Services Task Force, made up of citizens of Saint Paul, provided us with many good ideas and suggestions. Special thanks are due to its chairman, Robin Young, who kept our often spirited exchanges focused constructively on important issues.
Finally, we thank Mayor George Latimer for his enthusiastic support in launching this project, his active participation throughout, and his insistence that these are issues of importance to Saint Paul both today and in the future. A special thanks to former Deputy Mayor Richard Broeker for the spark needed to get the project under way.

We appreciate the help and advice of the National Advisory Panel, consisting of Mayors Vincent A. Cianci of Providence, Donald Fraser of Minneapolis, and Walter Tucker of Compton; John Collins of Seattle; James Etheredge of Charleston; Charles Hill of Phoenix; James Rich of Seattle; and Thomas Smerling of Minneapolis.

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I. INTRODUCTION

SAINT PAUL'S FISCAL DIFFICULTIES

The past several years have brought chronic financial difficulties to Saint Paul, Minnesota. Fiscal distress has been apparent to any citizen who has experienced the rise in tax burdens and noted the simultaneous sharp decline in the size of the municipal work force and the quantity and quality of city services. Unfortunately, if the city continues its current fiscal practices, the future will be no better than the recent past. The Rand-Saint Paul project diagnosed the city's problems as structural rather than cyclical. An economic upturn has enabled the state to increase aid to Saint Paul and has helped brighten prospects for fiscal year 1984, but the city's long-term problems remain. Saint Paul lacks control over much of its revenue base, and as a result, it faces a structural imbalance between the growth rates of its revenues and its expenses.

Revenues have not kept pace with inflation, so that in real terms the money available to pay for city services fell more or less continuously between 1976 and 1982, as shown in Fig. 1.1. Assuming no basic changes in the structure of city costs and revenues, we estimate that total revenues for Saint Paul would grow at an average rate of between 2.4 and 5.6 percent per year (in nominal terms) over the period 1984–1988. In a likely scenario of moderate inflation and moderate growth in state and federal aid, revenues would grow at about 3.5 percent per year. This is considerably below the growth rate experienced in the 1970s (between 1972 and 1980, revenues grew at 10 percent per year), but somewhat above that in the early 1980s, when total revenues grew at an average annual increase of 3 percent.

We estimated that total costs for the city will grow at an average annual rate of 3.7 to 7.5 percent per year, depending on the scenario. In what we judged to be the most likely scenario, the growth would be 4.9 percent per year.

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1In the first phase of the Rand-Saint Paul project, we estimated the level of revenues and expenditures the city could expect each year during this period. We projected revenues and costs independently and examined the gap between the two to identify the magnitude of potential future fiscal problems. This work is reported in Rand Note N-2066-SP, Five Year Revenue and Cost Forecasts for the City of Saint Paul, by Judith Fernandez, Kevin Neels, Michael Caggiano, Anthony Pascal, and Carol Hillestad (forthcoming).
The city's projected budgetary position is shown in Table 1.1. Even though a surplus is predicted for 1984, we estimate that by 1988 the deficit will reach $8 million—just over 3 percent of the budget in that

<table>
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<th>Total Revenues</th>
<th>Budget Gap</th>
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<td>205,133</td>
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<td>212,787</td>
<td>212,105</td>
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<td>223,007</td>
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<td>1987</td>
<td>233,574</td>
<td>227,681</td>
<td>−5,893</td>
</tr>
<tr>
<td>1988</td>
<td>244,043</td>
<td>235,959</td>
<td>−8,084</td>
</tr>
</tbody>
</table>
year. Although small relative to the total budget, such a gap means that to balance the budget in 1988, the city would have to:

- Lower the average wage of city workers by 7 percent in real terms over the period 1984–1988, in addition to decreases in real wages in the recent past, or
- Cut the number of positions paid for out of the General Fund by almost 9 percent, or
- Increase the property tax rate by almost 13 percent over what it would otherwise be.

Although falling real wages, service cuts, and property tax increases, singly or in combination, could balance the budget in 1988, they would not be a permanent solution; budget shortfalls would reappear in later years. In the absence of steadily growing levels of transfers from the state and federal government, Saint Paul's costs, driven by inflation, will routinely grow more rapidly than its revenues, only some of which keep up with inflation.²

Saint Paul's structural problem is aggravated by the fact that many of its revenue sources are strongly influenced by forces over which the city has no control: Its property tax levy is capped by state law. The volume of state aid the city receives depends upon the state's fiscal position and political decisions at the state level. Federal aid levels are even further removed from city control.

The overall result is a system of revenue sources that are both unresponsive to city needs and unable to keep pace with inflation. The reaction to this situation in the past has been repeated cuts in services and staff.

RESPONDING TO THE CHALLENGE

Saint Paul has worked hard to respond to the challenges posed by its chronic fiscal difficulties, attempting to broaden its revenue base and contain cost growth. The city has come to rely extensively on fees and beneficiary charges to finance city services. The costs of water and sewer services have long been covered by charges paid by consumers. Saint Paul has used special assessments to pay for the installation of new streets, as well as for the maintenance of the existing street system. As all parts of the city budget began to feel the fiscal pressure, city officials turned increasingly to benefit-based finance. Fees for the city's paramedic services were increased. The Division of Parks and

²Projected inflation rates vary from 5.0 percent in 1984 to 3.7 percent in 1988.
Recreation began to charge users of the city's athletic fields. The Division of Libraries began to collect a small fee for borrowing best-selling books. The Division of Traffic and Lighting instituted a policy of billing merchants and businessmen who requested special parking restriction in the vicinity of their stores. Revenues from these sources grew until by the early 1980s, beneficiary charges accounted for almost a quarter of the city's funding.

Fiscal pressure also encouraged the city to think more creatively about new ways of raising revenue. Initiatives ranged from the Friends of the Library contributor program to Riverfront Days, a major summer festival. The city began to take a fresh look at sources of income that had long played a role in its finances but had never been deliberately managed to improve their contribution to the city's revenue base, including fees from concessionnaires and revenue from the sale of services to neighboring jurisdictions.

In his state of the city address in the fall of 1982, Mayor George Latimer called for a major new effort to increase the city's fiscal self-reliance. Recognizing that Saint Paul's powers of taxation were restricted by law and that much of its revenue was controlled by decisions of the state or federal government, he announced a program to regain control of the city's financial future. That program included two major components: First, a study would be initiated to examine the city's personnel system and recommend reforms to enhance worker opportunity and satisfaction, and to promote productivity in service delivery. Second, the city would undertake a joint study with The Rand Corporation to investigate the use of benefit-based finance and to design a new organizational structure for city departments and divisions based on municipal entities called Revenue Centers, to encourage better financial management and a more entrepreneurial style of service delivery.\(^3\)

As part of the project, two pilot Revenue Centers were to be established as demonstrations and "field tests" of the concept. (The plans for setting up the two pilot Centers are included in Appendixes A and B.)

\(^3\) For both elements of the program, the Mayor appointed advisory groups composed of representatives of the local community. The Personnel Issues Task Force directed the personnel-system study, raising issues, setting priorities, and managing the work of the study staff. The role of the Responsive Services Task Force, the advisory group to the Rand study, was more limited. They served as spokesmen for, and guardians of, the values and priorities of the Saint Paul community. As such, they provided advice and guidance to the Rand team and helped to make sure that the study's recommendations were administratively, politically, and philosophically workable.
REVENUE CENTERS: A POSSIBLE SOLUTION TO SAINT PAUL'S FISCAL PROBLEMS

Revenue Centers decentralize authority, giving middle-level managers more control over what they produce and how they produce it. Market-type incentives encourage greater responsiveness to citizen demands and higher levels of performance. In contrast to traditional city departments, Revenue Centers would be encouraged to generate end-of-year surpluses through the development of new revenue sources and through improvements in the efficiency with which services are provided. Unlike traditional municipal enterprises, Revenue Centers would have a mixed funding base. Public good services would be financed by General Fund revenues, and private good services would be financed by user charges and other forms of benefit-based finance.\(^4\)

In many respects, Revenue Centers represent an effort to come to terms with the implications of the national trend toward increasing reliance on fees and charges. This new form of finance has sometimes been adopted for reasons of expediency. All too often it has been the only way in which city governments could raise new revenues in times of acute fiscal crisis. Consequently, little attention has been paid to the implications of this shift for city management. Cities can no longer simply assume that money will come in. It has become vitally important to think about precisely what services consumers want, and to develop a responsive, entrepreneurial style of management. Public managers must learn how to treat citizens not as clients, but rather as customers. Revenue Centers are explicitly designed to encourage this approach toward service delivery. They are intended not only to accommodate the shift toward user charges, but also to manage this change in ways that both provide financial benefit to the city and respond to the needs and concerns of the citizens.

Revenue Centers would provide an environment that is conducive to effective management. They would give the city’s managers the necessary authority and resources, while setting up a structure that rewards superior performance. This type of environment encourages interest in the city’s ongoing efforts to improve management, performance, and accountability, and increases the likelihood that good practices will be implemented.

Although Revenue Centers are not a magical solution that will sweep away all of the city’s budget problems in one dramatic gesture, they could set in motion a process that we believe can spread throughout city government. The result can ultimately be a thorough examination of all the possibilities for user charges and other forms of

\(^4\)Public good and private good services are defined in Section II.
benefit-based finance, carried out by the people who have the best and most detailed knowledge of the city's product line. In addition, the move toward Revenue Centers can lead gradually to the development of nontraditional sources of funding—enterprise income, revenue ventures, and money-making sidelines. Ultimately, these processes should diversify Saint Paul's revenue base, increase its self-reliance, and reduce the structural imbalance between costs and revenues. The time to start is now, while the current economic upturn has temporarily reduced the immediacy of the city's revenue crisis. This respite allows the city time to plan carefully and implement gradually the organizational changes we recommend.

PLAN OF THE REPORT

Section II deals with how to set prices for city services. Since this subject lies at the heart of the Revenue Center concept, it is given extensive treatment. The section begins with a discussion of the reasons for the increasing reliance on user charges and considers both their advantages and disadvantages. It then examines ways user charges can be instituted so as to minimize their impact on the poor and the disadvantaged, and discusses the mechanics of establishing charges for city services. It considers the various components that define a charge and examines the issues that each raises. Particular attention is paid to determining how much service should be provided out of general city revenues, and how much consumers should pay for. A range of pricing options from aggressive income maximization to heavy subsidy are considered, and guidelines are presented for determining which option should be used in any particular case.

Sections III and IV describe what a Revenue Center is and how it works. They consider the sources of funding that Revenue Centers would draw upon, policies for cash management, incentives for superior financial performance, methods for maintaining accountability to elected officials, and the role city workers would play in Revenue Center operation.

Section V outlines a general action plan for setting up a Revenue Center, and Section VI summarizes our conclusions and discusses the steps that Saint Paul should take next.

Appendix A describes a pilot Revenue Center designed for Saint Paul's Division of Traffic and Lighting. It considers the services that would be included in the new Revenue Center, the costs of providing
those services, and the revenue sources that would cover those costs. The action plan developed in cooperation with city officials for setting up a portion of this pilot Center for Traffic Operations is also included.

Finally, Appendix B describes the second pilot Revenue Center, designed for the Municipal Athletic Facility in the Division of Parks and Recreation. It addresses a set of issues similar to those considered for the Traffic and Lighting Revenue Center and presents the action plan for the Municipal Athletic Facility Revenue Center.
II. PRICING PUBLIC SERVICES

BENEFIT-BASED FINANCE

For many years, city government operations throughout the country expanded rapidly as tax receipts increased and state and federal governments became more generous in providing aid. From 1960 to 1978, real per capita general expenditures for local government nationwide grew from $302 (in 1978 dollars) to $520. In 1978, however, the trend was reversed. That year was marked by the passage of Proposition 13 in California, one of a series of measures intended to limit taxes and curb the growth of local government. Federal and then state aid to localities also began to decline as other levels of government experienced their own financial difficulties. By 1980, real per capita local government expenditures had fallen to $484 (in 1978 dollars), and since then, the downward trend has continued.

Nationwide, the revenue source that has grown most rapidly and has done the most to offset declining intergovernmental revenues is benefit-based finance. Unlike many other sources of funding, benefit-based finance is controlled by the city itself. Hence, it can increase self-reliance and reduce dependence on decisions made at other levels of government.

Beneficiary charges share some important characteristics that distinguish them from property taxes and other sources of general revenue. First, they represent payments for specific city services. Unlike property taxes, which support a wide range of activities, beneficiary charges are frequently earmarked. For example, the fee that a golfer pays to use a city golf course covers the course’s operation and maintenance. The golfer knows what he is buying when he pays his fee. Second, beneficiary charges are paid by the consumers of the service—the people, businesses, or institutions that benefit. A general sales tax earmarked to support a regional transit system would not constitute a beneficiary charge, but transit fares would.

Beneficiary charges that a citizen can avoid paying by not consuming the service are generally called user charges. A special assessment for street maintenance, which might be regarded as a form of benefit-based finance, would not be a user charge, since there is no way that property owners can avoid paying the assessment. Recreation fees, on the other hand, can be avoided by not using the city facilities. These are user charges.
Advantages

Beneficiary charges offer four primary advantages over other forms of finance. First, they can raise substantial sums of money at times when legal, political, or economic limitations restrict other potential revenue sources. Second, beneficiary charges encourage a change in management outlook. They can be administered so that the city unit providing a service in effect raises its own money through sales of the service, thus focusing attention of city managers on the concerns and demands of the people they serve, rather than on budgetary politics. As citizens become customers rather than clients, managers must become more directly responsive to their needs. Third, beneficiary charges can improve horizontal equity. Polls indicate that the public perceives beneficiary charges as a fair and appropriate way of paying for city services, because they guarantee that services are paid for by the people who use them. Reliance on beneficiary charges prevents limited public resources from being diverted to benefit special interests. Finally, benefit-based finance, especially user charges, rations the demand for public services and encourages people to be more careful in their use of public resources. A recent report to municipal leaders in Massachusetts emphasizes this point:

Setting a fee can also be used to lessen inefficient or wasted use of community resources. If a police or fire department has offered assistance to those locked out of homes or cars free of charge in the past, instituting a fee for this discretionary service may discourage individuals from relying on the service, and prompt citizens to give more thoughtful attention to protecting their homes and their cars. In this particular instance, the fee is instituted recognizing that it is not a big “money maker,” but an attempt to limit the discretionary assistance previously provided by public safety personnel. Because many services are seen as “free,” citizens may overuse the service. If there is a fee or charge, unnecessary use will be better regulated.¹

Disadvantages

Beneficiary charges have two major disadvantages: The revenue stream they generate can be unpredictable, and they can have an adverse impact on the poor and the disadvantaged.

Income from beneficiary charges tends to be less stable than traditional sources of city revenue such as property taxes or state aid. This is especially true of user charges, where consumption of the service and

payment of the fee are voluntary. A spell of bad weather can significantly decrease the fee income generated by a city’s recreational facilities. A slowdown in construction can wipe out most of the revenue from development fees. A city department that is heavily dependent on user charge income therefore must maintain much larger working capital reserves and must be able to respond much more quickly to changing circumstances. The job of departmental management becomes more demanding.

Beneficiary charges can in effect deny some services to citizens with limited incomes. Many services have traditionally been provided at no charge (that is, financed from general revenues) to make certain that they are equally available to all members of the community. Imposition of a user charge may limit access to services, i.e., poorer households may forgo use of the service rather than strain their already limited budgets.

However, a move toward user charges need not necessarily place undue burdens on the poor. This situation can be avoided by making careful decisions about when to charge for city services, and paying close attention to the design of the charges that are imposed.

CANDIDATES FOR USER CHARGES

To assess the feasibility and desirability of beneficiary-charge financing, city services can be grouped into three categories: public goods, private goods, and merit goods.

Public goods are the services that supply general benefits to the public at large. The best examples of public goods are police and fire protection. It is impossible to identify the extent to which each individual benefits from such services. One individual’s use of the service redounds to everyone’s benefit, since everyone has an interest in preventing crime and inhibiting the spread of fires. As another example, enforcement of planning and zoning regulations results in a more livable city for everyone. Traffic signs and signals ensure orderly traffic flow and thereby provide a general benefit to all travelers.

True public services should be funded out of general revenues. Indeed, the city has very little choice, since these services lack identifiable consumers.

Private goods are the polar opposite of public goods. It is possible to identify individual consumers of private goods. The benefits of private services accrue solely to those consumers, and the public at large has no stake in any individual’s consumption of the service. Although responsibility for provision of private goods and services is generally
left to the private market, the city may be active in this area for a number of reasons.

One of the most common reasons for public provision of private services is that the service represents a natural monopoly. For example, it is overwhelmingly cost effective for all the water service in a built-up area to be provided by a single organization. When a service such as water is provided on a monopoly basis, there are no market forces to constrain the behavior of the producer. The monopoly must be publicly regulated to assure that it does not exploit its powerful position. Under these circumstances, there is no advantage to private provision of the service, so services that involve natural monopolies are often provided by public entities. The major monopoly services that Saint Paul provides are water service, sewer service, and provision of streets.

A city may offer private services because they are naturally complementary to other services the city provides. Although use of a copier is clearly private, the library provides copiers because people who come to the library often need them—making copiers available is a natural extension of the library’s basic mission. The city maintains concession stands in the Como Park Zoo for similar reasons.

In other instances, the city may provide private services for no other reason than historical accident.

The city should try to recover the full cost of providing private services from the people who consume them. Failure to do so means that in effect the city is using general revenues to subsidize particular individuals and special interests. In a city with continuing financial problems, such subsidies are hard to justify.

The final category of city services is merit goods, which occupy an intermediate position between public goods and private goods and share some of the characteristics of both. They are like private goods in that they are generally consumed by identifiable individuals; they are like public goods because the benefits of the service spill over into the community at large. One of the best examples of this type of service is the treatment of communicable diseases. Clearly, the person who is sick and being treated is the prime beneficiary of the service; however, the community as a whole also benefits from the reduction of the risk of contagion that his treatment brings about.

IDENTIFYING THE PUBLIC GOOD COMPONENT IN CITY SERVICES

A major portion of the Saint Paul budget is allocated to merit goods, which in many ways are the hardest of the three categories to deal
with. Because there is a private benefit, consumers of the service should pay some charge. The charge should reflect the size of the private benefit, but it is not always easy to determine the relative public and private shares, and in many cases the dividing line reflects value judgments that are expressed through political decisions.

The public component of a service can take a number of different forms. Allowing people with contagious diseases to go untreated increases the health risk to the population at large. Thus, the reasons for the public interest in their treatment are clear and direct. In other cases, the public component can reflect a collective value judgment. For example, the citizens of Saint Paul have decided that they want to live in a community of well-read, well-educated people, so they have chosen to use public resources to support an extensive system of public libraries. The public component can reflect a general concern for the welfare of disadvantaged community members. The city provides extensive recreational services partly because it does not want the poor to be denied access to recreation.

Because they embody a mix of public and private goods, services in the merit good category should rely on a mixture of funding. A portion of their cost should come from contributions by consumers of the service, and the remainder should be supplied from general city revenues.

The city's leaders must identify the fraction of the cost that reflects general public benefits and that should come from general revenues. In Saint Paul, decisions have already been made about what fractions of the cost of citywide support services the various Special Fund activities will have to bear. A number of services, including the Oxford Swimming Pool and the Municipal Athletic Facility, have relied on a mixture of general funding and user fees. In September 1983, the City Council decided to cover 25 percent of the cost of summer street maintenance from general revenues.

Decisions about the funding mixture for different services tell the city's middle-level managers how much additional income they are expected to raise. With a target to shoot for, a manager can concentrate on developing the user fees, beneficiary charges, and enterprise operations that best fit the needs of his clientele and the characteristics of his operation.

We recognize that Saint Paul must make its own judgments about the services it has a vital stake in providing. However, we have devised some broad guidelines that can be used in making decisions about the financing of merit good services. These guidelines are based largely on

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Saint Paul's Special Funds apply to most of the services whose costs are covered by beneficiary charge revenues.
the work of the Saint Paul Responsive Services Task Force, as reported in the minutes of their May 4, 1983, meeting. Task Force members were asked to delineate the issues the city should consider before changing the way a service is provided. The group developed 26 issues and rated them in importance. We organized these 26 issues into seven basic categories, which we converted into a checklist (see Fig. 2.1). We then assigned a weight to each item on the checklist. The weights are the sum of the ratings assigned to each question by the Task Force, normalized to 100 and rounded to the nearest 5 for simplicity.

For any service, a “yes” or “no” answer should be recorded for each question. The percentage of the full cost to be paid by a beneficiary charge is then the sum of the weights for those questions to which a “yes” answer is recorded. In cases where Task Force issues pertain to more than one of the categories we developed, the total rating is divided equally among the categories into which the issues fall.

Examples of how two services, computer-based library searches and sewer-system capital improvements, might be scored are shown in

<table>
<thead>
<tr>
<th>Question</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Does consumption of the service generate minimal spillover effects on other members of the community?</td>
<td>25</td>
</tr>
<tr>
<td>B. Is it possible to identify a specific beneficiary for the service?</td>
<td>20</td>
</tr>
<tr>
<td>C. Is the imposition of beneficiary charges for this service statutorily and administratively feasible?</td>
<td>15</td>
</tr>
<tr>
<td>D. Would the imposition of beneficiary charges for this service evoke negligible political opposition?</td>
<td>15</td>
</tr>
<tr>
<td>E. Would the imposition of beneficiary charges for the service lead to substantial revenues for the city?</td>
<td>10</td>
</tr>
<tr>
<td>F. Would benefit-based funding of this service through Revenue Centers result in enhanced efficiency?</td>
<td>10</td>
</tr>
<tr>
<td>G. Would beneficiary charges for this service have negligible effects on the city’s competitive position?</td>
<td>5</td>
</tr>
</tbody>
</table>

Fig. 2.1—A checklist for evaluating merit good services
Table 2.1. These examples are hypothetical and do not necessarily reflect the values of the citizens of Saint Paul.

This scoring exercise suggests that the library should try to recover 90 percent of the cost of literature searches it runs for its clients, while the sewer division should charge users a little more than half the costs of infrastructure improvements.

We must emphasize that before dividing the charges for a service between the consumers and the community, the city's overall financial condition must be considered. Saint Paul can afford to provide only a limited array of services free of charge to everyone. In times of fiscal stress, the margin of generosity has to be smaller. For this reason, decisions about financing the production of merit goods must always be consistent with the volume of general revenues that are available.

Table 2.1

<table>
<thead>
<tr>
<th>Service Question</th>
<th>Literature Searches by Library</th>
<th>Sewer System Capital Improvements</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>C</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>D</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td>F</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>G</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>90</td>
<td>55</td>
</tr>
</tbody>
</table>

PROTECTING DISADVANTAGED RESIDENTS

As local government officials around the country have turned toward beneficiary charges as a source of revenue, they have worried about the effects of such charges on lower-income groups. In Saint Paul, city officials, workers, and citizens have all emphasized the importance of maintaining access to city services by all members of the community. Consequently, in developing the Revenue Center design, we sought to build in assurances that disadvantaged groups will be treated equitably.

The equity safeguards for disadvantaged groups would take three forms: (1) the continuing provision of basic public services, (2) the
manipulation of the charge structure for private and merit good services to ease the burdens it places on the poor and the elderly, and (3) the Safeguard system, a program of vouchers that the poor can use to pay beneficiary charges and obtain services.

Provision of Essential Services

The point of establishing Revenue Centers is to guarantee that essential city services will be provided to all members of the community. Collecting revenue from consumers of private goods will relieve pressure on property taxes and other General Fund revenue sources. That means the General Fund can be used to provide public or essential services freely and openly to everyone. These services constitute the first line of defense for the poor, the elderly, and the disadvantaged.

Designing Charge Structures

Even where fees and charges are imposed, it is often possible to structure them in such a way as to minimize their inequitable impacts. Such built-in protections constitute the second line of defense for disadvantaged groups in Saint Paul.

An example of this form of protection is lifeline electricity rates, which provide some minimum level of consumption at a low cost. Beyond that level, the price per unit rises. Thus, poor families in small houses with few appliances pay low rates, while wealthier families in large, well-equipped houses pay more. This example has direct relevance for Saint Paul in the water utility and in sewer services.

Another example of equitable charge structures is the system of group fare discounts used on most public transit systems. School children, the elderly, and the handicapped are charged lower fares than other passengers.

There are many possibilities for building equity protection into charge structures. Recreational programs and other city services for which people pay a fee at the point of sale can offer group discounts. Services that might be financed through special assessments, such as street maintenance, street lighting, and neighborhood parks, could allow elderly homeowners with limited cash incomes to defer payment until their houses are sold. It might also be possible to establish fees whose level varies with the income of the neighborhood. Discounts could be offered in low-income neighborhoods for libraries, recreation centers, and health clinics, or even in special assessments. In general,
each charge mechanism that the city might use will suggest its own set of possibilities.

The Safeguard System

The Safeguard system is the most comprehensive way of maintaining access to city services. This system would provide vouchers to members of disadvantaged groups for access to a wide range of responsive city services. These vouchers, financed from the city's general revenues, would reimburse Revenue Centers for services provided to the poor, the elderly, and the handicapped. The administrative feasibility of such a system has not yet been determined. Clearly, its costs would be substantial, and it is not clear whether its potential benefits would offset those costs.

The main issues in the design of the Safeguard system are eligibility, form of payment, and accountability. Defining eligibility requires a value judgment on the "appropriate" income level, age, or degree of disability that triggers admittance to protected status. Certifying eligibility requires a way of rating individual applicants. One way would be to administer specially designed means tests to applicants. However, such tests can be difficult and expensive to administer, and they are often a degrading experience for the people involved. Alternately, eligibility could be based on the tests and certifications already conducted in Saint Paul for welfare, food stamps, unemployment compensation, health care, and other programs.

A simple form of payment would be scrip that people could exchange for responsive city services. This is the approach now used in the food stamp program. Reimbursement of the Revenue Center would be based upon the amount of scrip collected.

Accountability problems are relatively easy to resolve in a system based upon the issuance of scrip. As long as the scrip could not be easily duplicated, the system could be policed. Clients could spend only as much scrip as they possessed, and the Revenue Centers would be reimbursed for only as much scrip as they turned in. Controlling the use of the scrip by ineligibles would present more difficult, but not insurmountable, problems. Identity cards could be issued along with the scrip, to be checked when the scrip was used. A political judgment would have to be made on the acceptability of permitting development of a "white market" in scrip. Selling of scrip by eligibles would provide extra resources for those to whom it was issued, but not necessarily in the form of city services.
ESTABLISHING CHARGES FOR CITY SERVICES

Once the decision to charge for a service has been made, a number of practical questions arise. Every charge has three components: a unit of measure, a rate per unit, and a collection mechanism. The unit of measure defines the quantity of service consumed. The charge per unit of measure sets the revenue yield for the charge. The collection mechanism is the administrative procedure for passing the payment from consumers to the producer of the service. Each of these three components must be defined and in place before the charge can be implemented. In addition, it is important to prepare the public for the charge through advance notification. These issues are discussed below.

Units of Measure

The unit of measure for a charge determines its magnitude for a particular individual. Gasoline is sold by the gallon, for example, and potatoes are sold by the pound. In general, charges for public services should be based upon similarly specific measures of the quantity of service consumed. However, it is often difficult to define a unit of measure for public services, so cruder measures must be used. The possible units of measure for assessing beneficiary charges fall into three categories: general levies, proxy measures, and quantity measures.

General levies rely on diffuse estimates of the benefit an individual receives from a service; they establish the weakest link between service consumption and charge level. In many instances, they differ little from a general tax earmarked for a specific use. Examples include a flat per-household fee for police protection, a property tax millage for fire protection, or a front-footage charge for street maintenance. In all these cases, there is a rough relationship between the basis and the benefit received, but it is only a rough relationship. Many general levies are compulsory and hence fail to qualify as true user charges. They do, however, help to focus public attention on the cost and quality of specific services. General levies are used most often for services that have a large public good component (i.e., spillover benefits) and for which output measures are hard to define.

Proxy measures rely not on direct measurements of usage, but on approximations. For example, most states finance highway construction and maintenance through a tax on gasoline sales. An ideal user charge would be based upon the number of miles driven by each vehicle.

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3A close relationship between consumption and charge level will encourage citizens to be careful about their use of the service and will encourage Revenue Center management to optimize the volume of output.
operator, but since that information is not available, gasoline sales provide a very serviceable approximation. Someone who drives a lot will contribute more to the support of the highway system than one who drives very little. Saint Paul now uses a proxy measure in charging for sewers. The city does not meter volume of effluent—the ideal basis for a user charge—but since what goes in must go out, except for lawn watering, winter water usage provides a good approximation, and it is used to assess sewer charges.

In cases where the service is not standardized, such as the review of building and site plans, the cost of providing the service is used as a way to estimate consumption. Saint Paul also uses this approach in charging for police protection at some special events.

When good output measures are available, charges can be based directly on consumption. In Saint Paul, water service and golf course charges are based on usage. The use of output measures as a basis for assessing beneficiary charges provides the strongest incentives to producers and consumers and in one sense, at least, the fairest apportionment of costs. Unfortunately, quantity-based user charges often require a more elaborate billing system than flat fees, and the costs of operating the system may outweigh the potential benefits. Practicality sometimes requires that compromises be made.

### Setting the Rate Per Unit

One of the most difficult problems in establishing charges for services is deciding how much people should pay. In practice, these decisions are often made on an ad hoc basis. In an effort to provide a more systematic basis for setting charges, we shall consider the various procedures that have been suggested and present a set of guidelines for choosing among these procedures in specific cases.

Procedures for setting fee and charge levels are either cost-based, revenue-based, or income-based. Cost-based procedures yield charge levels that reflect the costs of providing the service. They differ in the particular measure of costs that each considers. Most municipalities that have an explicit policy for setting charge levels follow some form of cost-based pricing. In some cases, cost-based pricing is legally mandated. California cities, for example, are prohibited from setting fee and charge levels any higher than the costs of providing the corresponding services. Similar restrictions apply to the fees collected

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^4There are two commonly used standards for judging the fairness of a charge: (1) whether it is paid by the person receiving the benefit, and (2) whether it is paid by the person who can afford to pay. Beneficiary charges are fair in the former sense, but not necessarily in the latter.
by the water utility of Saint Paul. Even when they are not prohibited from doing otherwise, municipalities will often set charges equal to costs out of a sense that this is an appropriate rule for a nonprofit entity to follow. In effect, officials have applied nonprofit status not only to the city as a whole, but also to the individual activities it engages in.

One common form of cost-based pricing sets charges equal to the direct costs of providing the service. Direct costs include all the expenses immediately associated with the particular service. The costs of all materials and fuels used for a city asphalt plant, for example, the salaries of all personnel working at the plant, and the amount spent on its maintenance and upkeep would be summed. Dividing this sum by the number of tons of asphalt produced would give the average direct cost, and hence the charge per ton.

A second form of cost-based pricing sets charges equal to average full costs. Full costs are higher than direct costs and lead to a correspondingly greater charge. They include, in addition to direct costs, appropriate shares of administration, overhead, and other indirect costs that are common to many activities. These costs are apportioned on the basis of the activities' share of the allocation "base." The simplest base is direct cost. Thus, if the direct cost of the asphalt plant is $1 million and the direct costs of all the other activities within the department to which it belongs add up to $19 million, the full cost of asphalt would include 5 percent of departmental administrative costs. Similar apportionments would be made for administrative costs at the citywide level. In particular instances, it may be appropriate to use a different allocation base for some overhead cost items. For example, Saint Paul now allocates Personnel Department costs to the Special Fund activities on the basis of their numbers of employees.

In its 1983 budget, Saint Paul instituted full recovery of central support service costs for Special Fund activities. These activities now have to pay the General Fund back for the administrative and citywide support services they receive, an important step toward adoption of full cost as a basis for setting beneficiary charges.

Costs vary with the quantity of service provided. Obviously, if the level of output increases, total costs will generally also increase. However, the average cost per unit may increase or decrease. Consider once again the case of the asphalt plant. Some costs of operation will remain the same regardless of the level of output. If the volume of

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5These indirect costs also include allowances for retirement of outstanding debt and the upkeep and replacement of all capital equipment. For a complete discussion of the concept of full cost, see Massachusetts Office of Communities and Development, op. cit.
asphalt produced is very small, these fixed costs will be spread over a small base. As the volume of output increases, the share of fixed costs that each ton of asphalt must bear will shrink, and thus average costs will decline. As the volume of output increases, the decline in average costs may continue for some time until production begins to approach capacity. After that occurs, average costs will rise. It may become harder to schedule the delivery of materials efficiently. At higher rates of output, machinery is likely to break down more often, requiring greater expenditures for repair and upkeep. As the facility becomes busier and more crowded, individual worker productivity may decline because of the difficulty of managing a larger workforce. The overall result will be increasing difficulty in coaxing each successive ton of asphalt out of the plant. When this occurs, average costs will tend to rise.

Although the above example referred exclusively to direct costs, similar volume-related effects can be found for indirect costs. In most situations, these can be regarded as fixed, so that as the level of service (and hence also the allocation base, however defined) grows, average indirect costs will decline. However, the workload in accounting, personnel, and the other overhead divisions may eventually grow to the point that it becomes necessary for them to expand. At that point, average indirect costs would rise.

In situations where average costs depend significantly on the level of output, economists advocate setting charges on the basis of marginal cost. The marginal cost of a service is the cost of the last unit of service provided. Conceptually, marginal cost is measured by the change in total cost (both direct and indirect) that would occur if output were increased by one unit. Setting prices to cover marginal costs leaves the city no worse off than it would be if it cut the service, and at the same time it guarantees that the public gets maximum use of the service.

Because indirect costs and many direct costs do not change with the quantity of service provided, marginal costs are usually below full costs and often even below direct costs. For this reason, the use of marginal-cost pricing often leads to a situation where beneficiary charge revenues must be supplemented by funds from other sources.

The marginal cost of providing a service may also include a congestion component when provision of the service involves the use of a facility with a fixed capacity, such as a swimming pool. As swimmers fill up the pool, a point may be reached at which the addition of an extra one starts to detract from the enjoyment of those already there. In this instance, the cost of serving an additional swimmer includes not only the maintenance and operating costs associated with his use of the facility, but also the cost of the degradation in the quality of the
service that his use causes for everyone else. In such cases, a simple way to institute marginal-cost pricing is to set fees high enough to cover operating costs and avoid overcrowding, but low enough to keep the facility fully used.

The second major class of procedures for setting charges looks at the revenue rather than the cost side of the picture. These revenue-based procedures reflect not what it costs to provide the service, but rather what people are willing to pay for it. There are two major variants here: market pricing and exemplary pricing.

Some of the services the city provides are also available on the open market from private producers. The going market price then provides a strong signal about how much the city should charge. The city cannot charge more than market price, since citizens could then be expected to obtain the service from cheaper private producers. But unless the city wants to subsidize a service to make it more readily available to disadvantaged members of the community, there is no good reason to charge less than the market price.

It should be noted here that the service available on the open market need not be precisely identical to that provided by the city. The basis for market pricing is the way demand for the service reacts to changes in the charge. City libraries, for example, have to compete with paperback book stores, which offer different but closely related services. If services available on the open market can substitute for what the city provides, there will be some charge level above which the city has almost no customers, and below which it has almost the whole market. That is the charge level that would be defined by market pricing.

For services that are not available in any form from private suppliers, the city may obtain some guidance in setting charge levels by examining fee structures in neighboring jurisdictions. With exemplary pricing, the city follows the example set by its neighbors. Their experience provides important, though limited, information. In most cases, charge levels in neighboring jurisdictions mark the bottom of the range the city should consider in its own pricing decisions. The fact that these charges have been successfully established proves their feasibility, both administratively and politically. There is less reason to believe that they have been set at an appropriately high level. Stronger finances, for example, may let neighboring jurisdictions be more generous in subsidizing services out of general revenues than Saint Paul can afford to be.

The final set of principles for setting charge levels is based on the amount of income generated. These principles consider both the cost and revenue sides of the equation. The three main alternatives here
are full cost plus markup, income maximization, and discriminatory pricing.

Under full cost plus markup, charges are set at a fixed percentage above full cost. With every unit of service provided, the city collects enough revenue to cover both direct cost and overhead plus some amount of net income. This principle primarily applies to basic utility services that the city provides on a monopoly basis and finances through a well-established user charge. In these cases, setting prices on the basis of full cost plus markup can turn the service into a source of income. Where the service is widely used, this form of pricing allows tax-exempt institutions to contribute something toward the operation of the city government. It may also simply be a convenient way for the city to expand its revenue base if demand for the service is such that modest increases in its price will have little effect on the amount consumed, if the city is legally empowered to raise the fee, if the billing and collection mechanisms are already in place, and if the distributional effects of the increase are not unacceptable. In many situations, there are legal restrictions against setting charges above costs, so careful legal work is needed before this principle can be used.

Under income maximization, charges are set at the level that generates the greatest net income for the city. If the service is available from private suppliers, income maximization probably dictates that the charge be set at the going market price. If the city alone provides the service, the income maximizing charge depends on both the nature of the demand for the service and its cost structure. In the case of a necessity like water or sewer service, the income-maximizing charge is likely to be well above full cost. For services that have fairly close private market substitutes, like some recreational services, the income-maximizing charge might not even be sufficient to allow recovery of marginal costs. In such cases, it might be more appropriate to speak of minimizing losses.

When all consumers pay the same fee for a service, determination of the income-maximizing fee level requires some experimentation and a consideration of both costs and revenues. If a fee is raised, the total number of consumers of the service will decline, but each of the remaining consumers will be paying more. Total revenue can thus either increase or decrease, depending upon the relative strengths of the two effects. Because less of the service is now being provided, costs of providing it should decline. If raising the fee increases net income, the income-maximizing charge is higher than the present charge. If

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In many cases, a city moves from direct to full-cost pricing simply to increase the yield of well-established user charges and to funnel some of the revenue into the General Fund.
raising the fee decreases total revenues, evaluation is more complex. If the decline in costs exceeds the decline in revenues, the income-maximizing charge may be higher than the present charge, since raising fees has still increased net income. If the revenue decline exceeds the cost decline, the fee may be too high, and income would be maximized at a lower fee level.

The idea behind discriminatory pricing is to avoid the tradeoff described above by setting high charges for those who are willing to pay a lot and lower charges for those who are not. This is hard to do, both because of the difficulty of determining what any individual is willing to pay and because of legal and ethical pressures to treat everyone equally. In practice, discriminatory pricing is accomplished by packaging the service in different ways that are aimed at different groups of people. For example, rates for parking in city garages close to the downtown area could be set higher than those for garages located farther out. Alternately, the city could charge higher fees for the use of swimming pools located in higher-income neighborhoods. Fees for the use of city golf courses could be lowered during off-peak periods to encourage more people to use them then. Successful applications of discriminatory pricing involve either offering the “high” end of the market a little extra convenience in exchange for a higher price, or offering discounts for times and places high-end consumers are unlikely to use. The service being offered must lend itself to alternate forms of packaging, and those setting the rates must have a sophisticated knowledge of their clients.

Because of the widespread impacts and policy implications of decisions about charge levels, it is impossible to spell out simple rules for using the procedures described above. Circumstances vary from one case to another, and inevitably political judgments have to be made. Nonetheless, it is possible to derive some general guidelines.

The simplest case to deal with is that of public goods. Here, charges are neither feasible nor appropriate. Thus, the rule to follow is not to charge for these services.

For merit goods, the range of choices is bounded by zero and the full cost of providing the service. If the public component in the service is very large, the charge should be set very close to zero. If the public component is very small, the charge should be set very close to average full costs. Where the actual charge should fall along this spectrum depends upon the relative importance of the public and private components.

In the case of private goods, there are more options, and the choice is more complex. In general, full-cost pricing is the appropriate way to set charges. But following this rule too slavishly may result in
inefficiencies and missed opportunities. To assure responsiveness to citizen demands and financial health, a more sophisticated and flexible approach must be taken to the pricing of private goods.

Three factors should be considered in setting the rate per unit for private goods: the revenue potential of the service, the cost of providing it, and the distributional implications of the charge.

It is necessary first to determine how much consumers of the service would be willing to pay. Consumers would be willing to pay a great deal for water service, since water is a necessity. They would be willing to pay much less for public library service, because there are many alternatives to public library service, and in a pinch people can do without it.

Market pricing and exemplary pricing both base charges exclusively on measures of what people are willing to pay. Even if a different charge principle is finally adopted, these two should be considered in evaluating the revenue potential of the service.

If revenue potential exceeds the full cost of providing the service, a decision must be made about how much net income the city should make from the service. It is here that the distributional implications of the charge become important. If a service is widely used by all segments of the community and all income classes, the effects of turning it into a source of net income may well be regressive. Under these circumstances, full-cost pricing would be most appropriate. If a service is directed primarily at large businesses or wealthier members of the community, it may be appropriate to price it so as to maximize the amount of net income it generates for the city. Full cost plus markup provides an intermediate procedure between these two extremes.

If the income potential of a service is below the full cost of providing it, a decision must be made about whether to continue providing the service. If consumers are not willing to cover the marginal cost of providing a service that is truly private, then it probably ought to be abandoned.

If consumers are willing to pay something between the full cost and the marginal cost of a service, its provision can still be financially beneficial to the city. Deciding these borderline cases requires considerable sophistication. The danger is that they will occupy personnel and resources that could be put to better use. But on the other hand, they increase the responsiveness of city government and can generate a certain amount of income that otherwise might not be available. It may also eventually be possible to develop them into profitable lines of business for the city. Charge levels for borderline services should be set so as to maximize net income to the city. Although such charges may not fully cover fixed costs, those costs would have to be paid regardless of how much or how little of the service is provided.
Collection Mechanisms

The third big issue in establishing a charge for a service is the method of collection. There are many possibilities, but one in particular is important enough to warrant some discussion: payment by mail.

Services that are widely and regularly consumed often lend themselves to a mail-based billing system. Saint Paul sends out regular water bills and Northern States Power sends out electric bills.

In many cases, a city can collect charges through a billing system established for some other purpose. In Saint Paul, for example, sewer charges are placed on the water bill, and special assessments are put on the property tax bill. The practice could be extended to applications such as collecting fees for fire inspections through the property-tax billing system.

The city could also make use of billing systems maintained by other organizations. If vehicle ownership were used as a basis for street assessments, the fee might be collected by the state along with registration fees and remitted to the city. This approach has been used by some states to collect local parking fines. In areas where telephone companies will collect fees for incoming calls, a modest fee could be collected for calls to the library's reference desk, for example. There are probably many possibilities of this nature, although each would have to be negotiated carefully with the outside party.

The advantage of using an outside billing system is that it saves the city the cost of establishing its own system. The disadvantage, in all cases, is that these systems are likely to be imperfectly suited to the requirements of the charge the city would like to collect. The alternatives are to add new capabilities to the existing billing system (generating costs that the city will probably have to bear), or to accept the use of a crude proxy measure.

The question of when to establish a new mail billing system depends upon the relationship between the magnitude of the charge, the cost of running the billing system, and the cost of alternative methods of collecting the charge. If the cost of collecting a bill exceeds the amount of the bill, there is clearly no point in going to the trouble. And, of course, there is no reason to establish an independent billing system if a cheaper alternative exists.

The costs of mailing out a bill and processing the reply tend to decline as the number of transactions increases. Higher volumes allow more automation and spread fixed costs further. Thus, charges that everyone pays (such as water bills or property taxes) tend to have their own billing systems.
Costs per transaction increase with the complexity of the bill; therefore, pulling together a lot of information in order to compute a complex bill is justified only if the sum of money involved is substantial. Conversely, for very simple bills (e.g., a flat fee for a season pass to the city golf course), it may be cost-effective to collect charges through the mail.

Notification of the Public

Any move toward user charges is likely to be met with grumbling and even some outright opposition on the part of citizens. People always resist having to pay for things they previously received free of charge. This is especially likely to be the case if the new fees are not accompanied by reductions in taxes, a situation that Saint Paul’s financial difficulties make very likely.

To deal with this problem, Revenue Center management may have to engage in some marketing. Citizens should be notified in advance of proposals for new fees and charges so that they will not be taken by surprise. Notification is especially important in a city like Saint Paul that has a strong tradition of citizen involvement in city affairs. At the time of notification, Revenue Center management should be prepared to make a case for the charge. They should be able to show how much the service costs and who is using it, and they should be prepared to explain why making consumers bear the cost of the service is fairer than funding it from general revenues. Management should also be prepared to meet expectations for higher quality that the imposition of fees will create among users.

In spite of the fact that no one likes user charges, the recent financial difficulties of many cities have made people more receptive to the idea of having to pay for city services. In many cases, the alternative to paying a fee was to give up the service. Against this backdrop, fees and charges do not look quite so bad. Although the easing of fiscal pressures during the preparation of Saint Paul’s 1984 budget removed some of the impetus toward fees and charges, it may ultimately result in a smoother period of transition. Citizens are less likely to be hit from all sides at once with proposals for new fees. The city as a whole will be able to reexamine its product line and make more considered decisions about which services should be charged to consumers and which services provide general benefits and hence should be financed from general revenues.
III. FINANCING REVENUE CENTER OPERATIONS

Arguments in favor of user fees and other forms of benefit-based finance typically emphasize their revenue-raising potential. These discussions overlook the implications of this form of finance for the management of city divisions and departments. Although it is possible to institute user fees within traditional organizational structures, their implementation makes it possible and often desirable to manage units of city government in a different way. The closer an arm of the city government comes to supporting itself through fees and charges, the more it can function as a business. Running businesses, however, is likely to be a new experience both for managers and for elected officials. The extent of the reorientation needed to take full advantage of the possibilities of user charges can be illustrated by looking at some specific features of this form of finance in Saint Paul.

Clearly, much of the initiative for increasing Saint Paul's reliance on fees and charges must come from the bottom up. Most of the obvious steps toward user charges have already been taken. The city must now concentrate its efforts on the development of a set of small fees and charges for the large number of minor services that the city provides. Development of these charges requires detailed knowledge of both the services the city provides and their "markets." City workers and lower-level managers are close to the day-to-day realities of service delivery and know where opportunities lie. Top leadership must rely on their expertise.

Traditional modes of public administration involve close supervision of lower-level managers by the city's top leadership. When general revenues fund a city department or division, the direct links between the consumers and the producers of the service are weakened. In effect, then, elected city officials act as representatives of consumers, exercising direct control of department or division operations. Lower-level managers are told what services to provide and how to provide them.

Financing city services through user charges opens up a new relationship between consumers and service producers. City departments and divisions will have to win the business of their customers for some private goods by providing high-quality services at acceptable prices. These circumstances constrain lower-level managers to the realities of their markets, and there is less need for detailed oversight from above.
In fact, a greater reliance on market forces should sharpen the public manager's focus on the needs of the people he serves.

As city departments and divisions come more to resemble private businesses in their methods of finance and operation, they will be less well served by existing structures of city management and control. They will need a different environment to reach the full potential that the transformation holds out for them, but exactly what that environment should be is not yet fully clear. Although the city can learn much by looking at how private businesses manage their operating divisions, city departments will always differ from private businesses in many important respects. It is vital that whatever system Saint Paul ultimately adopts for management of its municipal enterprises recognizes both their public and their private attributes.

The Revenue Center concept has been designed to meet the needs of Saint Paul's emerging municipal enterprises. Revenue Centers produce and distribute private and merit good services in exchange for beneficiary charges, while producing public services through "contracting-in" to the General Fund. They provide a congenial environment for the businesslike aspects of city operation, while maintaining accountability and providing for the attainment of fundamental public goals and objectives.

In the following discussion of the financing of Revenue Center operations, we first consider procedures that would be used to account for Revenue Center income and expenses and the ways in which they could be used to provide incentives for superior financial performance. We then examine the revenue sources that would finance Revenue Centers, paying particular attention to the policies and management styles that encourage the broadening of a Revenue Center's working capital needs and dealing with several issues regarding borrowing and cash management.

**BUILDING IN A BOTTOM LINE**

A Revenue Center manager will be encouraged to pay close attention to the Center's financial bottom line. This will not only encourage superior performance on the part of managers and workers, it will also help to direct their attention, their efforts, and their imagination toward solving the city's chronic fiscal problems. Realizing these benefits will require some redesign of the city's accounting procedures and financial practices.

To orient employees toward the bottom line, the city must establish explicit goals for financial performance. People will work harder and
more effectively when they have a clear sense of what their goals are and how much progress they are making. Because of the importance of having measurable objectives, Saint Paul has made a major effort in recent years to establish performance goals and objectives for all of its branches. Defining these goals has become a major element in the budget process. Revenue Centers add a new objective to traditional city departments—a financial objective. Employees and managers will be asked to expand their revenues and contain their costs in such a way as to end each fiscal year with a surplus.

In establishing a fiscal goal, it is important to define the measure of performance in such a way that it emphasizes the kinds of actions the city wants to encourage. The accounting structure for a Revenue Center should make improvements in the “bottom line” consistent with improvements in the city’s long-term financial health. Specifically, the measure of financial performance should encourage Revenue Center employees and managers to

- Expand their revenue base
- Contain the cost of providing services
- Preserve the city’s capital assets
- Economize on the use of city support services

Saint Paul now has available and uses an accounting entity that does most of these things, the enterprise fund. This fund allows the city to account for the financial transactions of an activity on a basis comparable to that used in private business. Traditionally, enterprise funds have been used for activities that are able to fully support themselves with revenues from fees or charges. A typical example would be a municipal water utility that supports itself through water service charges. Saint Paul uses enterprise funds more extensively and more creatively than many cities. The Division of Parks and Recreation in particular has done a commendable job of using enterprise funds to incorporate income from concessions and special events into its budget.

The institution of Revenue Centers would change the way the city uses enterprise funds. These changes would not necessarily require legal action or a redefinition of what an enterprise fund is; rather, they would involve a shift in the way the existing definition is used. They would alter current practice in the use of general revenues, the treatment of overhead costs, and the use of capital assets.

Currently, Saint Paul uses enterprise funds almost exclusively for activities that finance their own operations solely through fees and charges. Activities that have some own-source revenues but are not fully self-supporting are accounted for in the General Fund. Their
own-source revenues then become a funding source for the General Fund. Revenue Centers would extend the use of enterprise funds to these mixed funding cases, by receiving a transfer from the General Fund to the enterprise fund account. This revenue would then be treated in the same way as any other source of income.

The best way to build an awareness of and concern with opportunities for raising own-source revenues is to make all funds generated as a result of Revenue Center activities directly available to the Revenue Center budget. When the fees and charges that a department collects are funneled into the General Fund and reallocated through the budget process, they cease to be objects of direct departmental concern, and this leads to a perception that the department budget is independent of the amount of money raised. The department may even have an incentive to avoid collecting fees, since giving the service away improves its standing with the public. In contrast, when revenues go directly into an organization’s budget, as they do in an enterprise fund, the collection of fees and charges directly affects the ability of that organization to provide needed services. The organization is likely then to make efforts to market its services, and to make sure that what it does is precisely targeted to the needs of its customers.

Public managers have always been concerned with costs and with keeping their operations within budget. However, traditional budget practices do not take into account all components of cost, and they provide little or no incentive to end the year under budget. The managers of General Fund activities in particular have a very limited view of what their costs are. The costs of many items that are vital to the provision of services in their areas are hidden away in other parts of the city budget. Without knowledge of such costs, managers may even encourage excessive use of the resources that generate them.

A prime example of the failure to budget full costs is Saint Paul's present treatment of fringe benefits for General Fund employees. Although wage and salary costs are budgeted to particular activities, the fringe benefits for General Fund employees are lumped together in a single set of general government accounts. As a result, General Fund managers frequently perceive labor costs to be lower than they really are and may therefore undervalue the benefits of labor-saving equipment and practices.

Many city activities provide services not directly to the public, but to other parts of city government. The costs of these support services should, under full-cost accounting, be included in the budgets of the activities that use them. In many cases they are not. Some support services are inputs to identifiable activities that use them in measurable amounts. For example, the Public Works garage in Saint Paul
sells vehicle repair services to other Public Works activities. Other support services are inputs to all activities. The Treasury Division, for instance, processes financial transactions for all branches of city government.

Providers of the first type can bill their customers directly and operate on the revenue generated thereby. The city's Internal Service Funds operate in this way. There are numerous advantages to such an arrangement. It guarantees that the costs of support services appear where they belong—in the budgets for the final services delivered to the public. Because they have to pay for services received from other departments, the user departments are encouraged to be more careful in their use of them. Forcing city providers of support services to earn their revenues can provide strong incentives for improved performance, especially in cases where consumers are allowed to choose between the internal provider and outside suppliers. As long as the individual transactions are large enough to keep administrative costs within reasonable bounds, it is desirable to provide such support services through internal service funds.

It is not possible to identify customers for the second type of support services, or to figure out, except in a relatively arbitrary way, how much of the service any individual activity uses. Furthermore, a great many support services, including those provided by the Budget Office, the Accounting Division, and the City Council, involve the exercise of an oversight function that should not be controlled by the activity manager. For these reasons, the Internal Service Fund model is not applicable. Payment of the costs of these general support services must be mandatory, based on an allocation among the activities on whose behalf they are provided.

The costs of citywide support services in Saint Paul are now allocated in a sophisticated way to all Special Fund activities. In contrast, no charge for support service costs is levied against the activities in the General Fund. Ignoring these transactions between General Fund

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1Many people in city government have suggested that allowing freedom of choice over suppliers of support services would result in extensive use of outside suppliers for reasons not in the best interest of the city as a whole. Ultimately, this argument suggests, the city would wind up paying more for support services than it does under the present arrangement, which gives Internal Service Funds a monopoly on city business. This argument carries some weight when the customers for an Internal Service Fund are General Fund activities, which have weaker incentives to contain costs. There is much less reason for Revenue Centers to be required to do business only with internal suppliers. Their incentives to control costs, we believe, would lead them to the suppliers that best meet their needs. We recommend, therefore, that Revenue Centers be given freedom to choose their own suppliers for private support services. This policy would give Revenue Centers a way to control costs, and the city's Internal Service Funds an incentive to remain competitive.
activities is justified by the contention that "it all comes out in the wash." In one sense, this statement is true. Transactions among General Fund activities leave the city's overall budget unchanged, and ignoring them does eliminate a certain amount of paperwork. However, failure to budget for support service costs provides a biased view of the costs of General Fund services. The result is a loss of management control and a reduction in the city's overall ability to contain costs.

In Saint Paul, there appears to be no consistent policy for the treatment of departmental and divisional overhead costs. Strictly speaking, they are part of the full cost of service provision and should be allocated to individual activities.

Enterprise funds allow the city to depreciate capital assets and to include depreciation charges in individual activity budgets. Except for the water utility, however, this option has not been widely used. Much of the capital equipment used by the city's enterprises is carried on the books as part of Saint Paul's general fixed assets. Even when assets are carried on the enterprise fund's accounts, they are frequently not depreciated.

To more accurately represent costs, Revenue Centers would depreciate all eligible capital assets. Annual capital costs would thus be included in individual activity budgets, and balance sheet transactions would play a more important role than they do in the city's current enterprise operations.

The Revenue Center balance sheet would be structured in the same way as a private business balance sheet. The asset side would include physical assets such as land, buildings, or machinery, cash, accounts receivable, and loans to other city agencies. Liabilities would include accounts payable and loans that the Revenue Center has received from other city agencies. It should present an up-to-date picture of the Center's net worth.

The Revenue Center balance sheet would fulfill a number of important functions. By permitting the depreciation of capital assets, it would show service costs more accurately. Full-cost accounting is important not only because it provides a more appropriate basis for pricing services, but also because it provides a truer measure of Revenue Center income. Money would become available as retained earnings to the Revenue Center and its workers only after the Center had generated enough revenue to cover its capital costs.

The balance sheet could be used to provide for the timely replacement of the city's capital facilities. If revenues from all sources were sufficient to cover full costs, depreciating capital assets would have beneficial results. As asset values are reduced to reflect the effects of
wear and tear, cash on hand would grow. Total asset value would remain unchanged, but asset composition would shift from physical capital to cash. To preserve facilities over time, the city could earmark the cash generated by their depreciation for replacement. Such earmarking would guarantee that the Revenue Center would always have the funds needed for major repairs and replacements.

The listing of assets on the balance sheet would provide both the Revenue Center and the Central Administration with a clear statement of what facilities the Center is responsible for, and just what it has to work with. In so doing, it would provide for better management of and accountability for those assets.

Finally, the balance sheet would increase Revenue Center autonomy in concrete ways. Two of the most important ingredients in any recipe for decentralizing authority are seed money for starting new ventures and a method for carrying such funds over from one year to the next. The Revenue Center balance sheet would provide both. As a Revenue Center builds up its cash balances, it would generate front-end money to initiate new activities. Apart from the need to maintain working capital reserves and to set aside funds for capital replacement, the Revenue Center would be free to spend its cash balances as needed to respond to changing service demands.

DISPOSITION OF SURPLUSES

With a full accounting of costs, retained earnings by the Revenue Center would represent true profit from operations and would be treated somewhat differently from earnings in current enterprise funds. A portion of Revenue Center retained earnings would be paid back into the General Fund. This payment—in effect, an internal tax—would guarantee that the Revenue Center, which has used city resources and has taken advantage of the city's nonprofit status, makes some contribution to the solution of the city's financial problems. However, the rate at which retained earnings are taxed would have to be low enough to maintain the incentive to generate the surplus. The appropriate rate would depend on the income potential of the Revenue Center in relation to its expenditure base. Where retained earnings are small in relation to total expenditures, the tax rate should be low, and a majority of earnings should be plowed back into the Revenue Center. Where earnings are large in relation to total expenditures, plowing them back in would lead to expansion without limit, which may not be in the public's best interest. In most instances like this, it would be appropriate to set the internal tax rate high and funnel a large portion of the
income into the General Fund. These conditions argue for imposition of a progressive tax rate on retained earnings.

A portion of the retained earnings should also be returned to the people who were primarily responsible for them—the workers, from the top manager to the most junior person in the department. The exact form in which retained earnings would be returned to workers should be discussed and negotiated, in cooperation with the city's labor unions. A fund might be set aside for merit pay increases, or retained earnings might be used to pay for additional training, education, and worker career development, a need uncovered by the current city personnel study.

The bulk of retained earnings should be kept for the use of the Revenue Center itself, to purchase additional equipment, to build up working capital reserves, or to initiate new ventures.

REVENUE SOURCES

Funds for Revenue Center operation can be divided into two main categories: own-source revenues, which include all the funds generated as a result of the Center's own current activities; and general revenues, which come from taxes and are appropriated to the Center by the Mayor and the Council.

Own-Source Revenues

Own-source revenues for the Center consist of earmarked revenues, user charges, and enterprise earnings.

Earmarked Revenues. A large portion of Saint Paul's revenue is legally restricted to specific purposes. In many cases, organizations supplying the funds impose the restrictions on their use. For example, Saint Paul receives a good deal of money from the state and federal governments in the form of grants for specific projects or programs. These earmarked revenues are often accounted for in the Special Funds. In other cases, the restrictions are inherent in the city's own charter. Some permit fees, for example, can be set no higher than the costs of administering the permit-granting programs. Expenditures for and revenues from permit fees are accounted for in the General Fund.

Where a source of revenue is earmarked for a use that falls within the purview of a Revenue Center, that revenue should be treated as own-source financing. To do otherwise would require either creating a separate organization with overlapping responsibility, or a direct intrusion by the central administration into the Revenue Center's area of authority.
**User Charges.** Financing for Revenue Center operation would come largely from user charges and other forms of benefit-based finance. The city's central administration should encourage managers to develop and submit ideas for beneficiary charges.

The city should also give equal attention in budget hearings to revenue increases and expenditure cuts as ways of attaining fiscal balance. In recent years, when department and division heads have submitted their General Fund budgets, they have been asked to prepare alternative budgets reflecting cuts of varying magnitude from their original request. Revenue Center managers should have the option of responding to these requests either by reducing planned expenditures or by increasing own-source revenues. Both alternatives should be given serious consideration by the city's leadership.

A second way to encourage new user charges would be for the city to grant all Revenue Centers (except those that offer monopoly services) the authority to provide new services that are self-supporting. If these new services make no claim on the city's general revenues, there should be no need for central approval or authorization beyond that implied by normal budget approval processes.²

Managers of Revenue Centers providing monopoly services would have to continue to submit proposals for fee increases for central administration approval, to guard against possible monopolistic abuse.

**Enterprise Earnings.** Many Revenue Centers would probably enter into certain lines of work solely to take advantage of the income to be earned. Net earnings from these activities would become part of the Center's revenue base.

The distinction between user charge revenues and enterprise earnings depends upon how central the service is to the Revenue Center's core mission. User charges pay for services whose provision is part of the Revenue Center's basic job; enterprise earnings are generated by money-making sidelines. Thus, for example, a charge for taking best-sellers out of the library would be a user charge, while the revenue generated by library vending machines would constitute enterprise income. In practice, the distinction depends primarily on how the city and the Revenue Center choose to regard it.

A city's entry into money-making sidelines is likely to generate a good deal of controversy. The private suppliers with whom the city will be in competition can be expected to generate political opposition to the city's move. State law may place restrictions on the services the city can provide, or on the extent to which service prices can be set.

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²The city will of course have to exercise some caution about entering into long-term commitments that could become liabilities if the new service fails to take hold.
above costs. Federal law places limits on how far a city can go without
losing its nonprofit status. In addition, entry into money-making side-
lines raises moral and philosophical questions for city officials and
employees. To what extent does the pursuit of income and profit con-
fl ict with their roles as public servants? The city must establish clear
guidelines about the types of activity it considers appropriate.

The city should limit itself to activities that are closely related to its
normal service responsibilities. In this way, it can minimize conflicts
with existing organizational and individual responsibilities. New
activities that represent an extension of what employees and managers
are already doing should make them more secure in their roles as pub-
lic servants and less troubled by their new responsibility for raising
revenue. The city can also minimize the potential legal problems asso-
ciated with its entry into money-making ventures. Nonprofit organiza-
tions such as cities have considerable freedom to pursue activities
related to the public purposes they serve. The Internal Revenue Ser-
vice has allowed nonprofit institutions to set up businesses that help to
cover the cost of running the institution, as long as the substance of
the business is related to the purposes of the institution as a whole.
Ventures that have little to do with the city's basic role are much less
likely to stand up to close legal scrutiny.

The problem of political opposition to city efforts to establish
money-making sidelines has no simple solution. But activities closely
related to city responsibilities are more likely to represent niches that
private businesses have overlooked, and the city's activities in these
areas are more likely to be perceived as legitimate. If the city is
experiencing financial difficulties, there may be more general support
for experimental efforts to raise additional revenue, since the alterna-
tives would involve painful service cuts or tax increases. Even in these
cases, however, there remain larger philosophical questions about
whether government should get involved in such activities.

We do not claim to resolve those questions here. We recognize that
they have significant implications for our conception of the proper role
of government, and that they are questions about which reasonable
people can differ. We adopted the position that if a sideline was
closely enough related that its adoption was consistent with sound law
and good management practice, and if the city could provide the good
or service cost-effectively, there was no philosophical reason why it
should not do so. Individual cities, of course, would have to form their
own judgments about the appropriateness of particular proposals.

If a decision is made to proceed with the development of enterprise
earnings as a revenue source, Revenue Center managers would have to
make clear decisions about which services, activities, and operations
exist solely to generate revenue and which would be continued regardless of profit or loss. Without such decisions, it would be impossible to determine when an enterprise has failed, and hence needed to be shut down. Key public services will often require support from the General Fund or other revenues, but subsidies should never be allowed for activities that are supposed to be sources of income. Once they have gotten past the start-up phase, they must not only be fully self-supporting, they must generate a surplus. Unless Revenue Center management demands strict performance from enterprise activities, they will increase the city’s financial problems rather than reduce them.

Although Saint Paul’s money-making sidelines can be as varied as the services the city provides, there are three general types of activity: complimentary services, support services, and extra services.

Complimentary services go so well with other city services that they are often consumed together. An example would be food concessions in city parks and recreation facilities. Because the city provides the customers, it is in a position to demand a share of the concession profit.

There are many complimentary services that could be turned into sources of revenue. The Division of Parks and Recreation in Saint Paul is active in this area, with its concessions, facility rentals, concerts, flower shows at the conservatory, and the Riverfront Days festival. The library could generate income by renting typewriters, copiers, or even word processors to library users, in addition to its income from vending machines. Many cities now sell advertising space on their parking meters, following the lead of public bus companies, which have long used advertising as a supplemental source of income.

The city must often make a choice between giving out a concession or franchise to a private firm and operating the facility itself. These decisions should be made on a case-by-case basis. Often, however, self-operation will provide greater financial benefit. The city must pay the same prices as a private business would for most supplies and materials, and many city workers enjoy higher wages and benefits than their private sector counterparts. But the city does not pay state or federal business taxes, and through self-operation it can take any profit that is earned. In many cases, the deciding factor will be worker productivity, where the city may be at either an advantage or a disadvantage relative to private firms, depending on the morale and specific skills of its workers and managers.

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3 We recognize that not having to pay state and federal taxes does not provide the city with a true cost advantage. Relatively speaking, tax-free status means merely that the city is able to pass certain costs on to the state and federal governments in a way that private businesses cannot.
Support services provide inputs to the production of services that are delivered to the public. Saint Paul owns and operates an asphalt plant because it needs asphalt to maintain the streets. It operates a crime lab to aid in the investigation of crimes and the apprehension of criminals. Neither the asphalt plant nor the crime lab provides services directly to the public.

Saint Paul can and does generate income from the sale of support services to noncity users. Most of these sales are to other governmental entities with similar requirements. The asphalt plant supplies the county and the school district, while the crime lab does some work for police departments in neighboring jurisdictions. In some cases, the potential market for support services includes both nongovernmental nonprofit entities and private businesses and households. The asphalt plant, for example, could conceivably supply asphalt to citizens who want to repair their driveways.

The sale of support services is often advantageous to both the city and its customers. As one of the largest governmental units in the area, Saint Paul can achieve greater economies of scale than smaller jurisdictions. In addition, many of the city’s support facilities have excess capacity and could operate at much higher rates of utilization than they do at present. In some situations, city workers could provide extra support services during slack times when they would otherwise not be fully employed. Where the alternative is purchase from a private provider, the same factors come into play that influence the decision about whether or not to self-operate. The city may have a cost advantage, in which case it can charge its customers a favorable price and still generate a stream of income.

There is a strong consensus among citizens, elected officials, and workers that Saint Paul’s core services should not be used as sources of income. Even in cases where a user charge would make a service self-supporting, there is a feeling that charge levels should be set only to cover costs. When support services are sold outside the city, however, or when supernormal levels are provided, it may be appropriate to charge prices that exceed full costs. For example, the Division of Parks and Recreation allows Saint Paul households to pay for the installation of larger trees in their neighborhoods than would be provided under the city’s reforestation program. In other cases, “extra” services means providing the standard level of service to new customers, as when the Fire Department contracts to provide fire service for the 3M plant in Maplewood.

If a decision is made to proceed with a new revenue-generating venture, a business plan should be developed that addresses several key points. It should specify the labor, materials, space, and equipment
requirements for the venture. It should identify the ultimate market for the service and estimate how much revenue it will eventually generate. It should also specify a schedule for when costs will be incurred and when revenues will be expected, including milestones that can be used to determine whether the venture is unfolding as expected. Developing such a plan forces initiators to think concretely and may uncover problems.

Such plans should probably be subjected to outside review, possibly by the Department of Finance and Management Services and the city's other enterprise fund managers. These reviews should reflect a basically positive attitude. The reviewers should share their knowledge, not subject plan proponents to a trial by fire.

The initiation of a new venture often requires seed money. Normally, this money would be supplied by the Revenue Center itself out of retained earnings. In some cases, funding may be insufficient, either because the sums required are large or because the Revenue Center has not yet built up its cash reserves. In either case, the funds would be advanced to the new venture as a loan to be repaid from future earnings.

As a revenue venture gets off the drawing board, starts to function, and advances toward maturity, it will pass through a number of distinct stages. *Initiation*, when the idea ceases to be just talk and starts to become reality, is where the Revenue Center takes the steps needed to make the venture happen, and costs start to be incurred. *Revenue generation* is the point at which outside funds start to flow into the venture. *Positive cash flow* begins when the income becomes sufficient to cover direct costs. A venture that reaches this point is likely to succeed. *Coverage of full costs* occurs when the revenue stream becomes sufficient to cover not only direct costs, but also overhead and depreciation of capital assets. At this point, the venture pays for itself completely. *Attainment of revenue goals* occurs when the surplus of revenues over costs reaches preplanned targets. Each of these stages constitutes a milestone at which the venture should be evaluated to determine whether or not it is living up to expectations.

Although revenue ventures should be evaluated continuously, at some point it will be necessary to make a decision on whether each venture is successful. Losing ventures would only increase Saint Paul's financial problems, so Revenue Center managers would have to enforce strict standards of performance. It may be difficult to distinguish between a venture that is slow in getting started and one that simply does not have the potential its initiators hoped for. The original business plan must provide evaluation standards that can be used in deciding whether to continue or abandon the venture.
General Revenues

The final source of funding for a Revenue Center is the city's general revenue—the discretionary funding appropriated by the central administration that comes from property taxes, gross earnings franchise fees, unrestricted state aids, general revenue sharing, and other sources.

Theoretically, the General Fund support received by Revenue Centers should cover the costs of the "essential" services they provide. Practically, however, General Fund support would have to cover the costs the Center cannot cover with its own-source revenue. Computing General Fund support purely as a residual, however, would destroy many of the incentives that Revenue Centers are designed to create. The Center could not generate a surplus, since decreases in costs and increases in own-source revenue would both translate dollar for dollar into a reduction in General Fund support. Preserving incentives requires a different kind of relationship between the Revenue Center and the central administration.

Under the traditional arrangement, the Mayor and the Council appropriate a certain amount of money for a department, specify in some detail what it is to be spent on, and then implicitly say, "Do as much with this as you can." In a Revenue Center, the incentives have to be different. The focus must be on the level and quality of services provided, rather than on how much money has been spent. Revenue Center managers and workers will need encouragement to be creative in how they deliver services. Under the relationship envisioned here, both parties would agree upon a specific level of service. The central administration would thus provide a sum of money sufficient to support that level of service, and the Revenue Center would be left alone to provide that level of service in the most cost-effective way possible.

The city has such a relationship with private firms that provide services to it and its residents under contract. Turning service provision over to private firms is commonly referred to as "contracting out"; we refer to this new relationship between the central administration and the Revenue Center as "contracting in." It is described in detail in Section IV.

CASH-FLOW MANAGEMENT

The statement of proposed 1984 budget goals and policies for Saint Paul noted that although maintenance of sufficient operating cash reserves is a basic principle of prudent financial management, a number of the city's funds were operating with cash deficits. The
statement proposed that fund managers not be allowed to submit a budget that projects a cash deficit without a written multiyear plan for erasing that deficit. Funds with insufficient cash reserves would be able to borrow from cash-rich funds at interest rates to be negotiated by the two fund managers and the Director of Finance. The budget policy statement also proposed that managers of enterprise funds, whose revenue streams are less predictable, should attempt to maintain cash reserves equal to two months' operating expenses. These guidelines reflect nothing more than prudent financial management, and they should apply to Revenue Centers as well.

The two-month rule for establishing working capital requirements was intended to apply to enterprise operations that are completely dependent on “unpredictable” sources of revenue. Most Revenue Centers, however, would continue to receive significant amounts of General Fund support, so Revenue Center working capital needs should be lower than those of other enterprise operations. Our designs for pilot Revenue Centers are therefore based on working capital reserves at the level defined by two months' receipts from “unpredictable” revenue sources, including earmarked funds, user charge receipts, and enterprise income.

Many Revenue Centers would have to borrow, particularly during their initial years of operation. Many would need seed, or front-end, money to get started, and few would initially have sufficient reserves of working capital. In addition, some Revenue Centers will rely on forms of financing such as special assessments in which there is a lag between expenditure for service provision and receipt of revenue.

There are a number of potential sources of borrowed funds for Revenue Centers: Cash-rich funds, such as the General Fund, may be an attractive option when a Revenue Center is being set up from activities that had formerly been included in the General Fund. If a large sum of money is needed for facility construction or alteration, it may be desirable for the Revenue Center to borrow from the Permanent Improvement Revolving fund.

For reasons of financial prudence, the city should restrict the ability of Revenue Centers to borrow from outside sources. The city can thus maintain control over Revenue Center operations and avoid having to assume liabilities incurred because of an operation that did not succeed.

\[4\text{Proposed 1984 Budgets: Goals and Policies, op. cit.}\]

\[5\text{The pilot Revenue Center for the Division of Parks and Recreation, for example, would need several hundred thousand dollars to construct an inflatable bubble for the Municipal Athletic Facility. See Appendix B for details.}\]
A move toward Revenue Centers is likely to increase the interfund borrowing that takes place within a city. Mature Revenue Centers are likely to have revenue surpluses, while new Revenue Centers will need infusions of working capital. The provisions for interfund borrowing outlined in Saint Paul's budget policy statement represent a useful step toward meeting these needs. Many of the skills and capabilities needed to run an internal banking operation exist within the Budget Office, the Department of Finance and Management Services, the portions of the Department of Planning and Economic Development that administer residential and commercial loans, and the city's credit union. The city would be wise to expand and build upon these institutional capabilities.
IV. STRENGTHENING REVENUE CENTER MANAGEMENT

A major premise of the Revenue Center concept is that many decisions about service mix and delivery should be left in the hands of the people who actually produce the services. Being directly involved in the production process, they understand which technologies and equipment are most effective and which work rules will get a job done. In addition, because of their day-to-day contacts with service consumers, they generally know who benefits from different services, which services are most highly valued, and what unmet needs are emerging. Revenue Centers are intended to tap this reservoir of knowledge and experience. This will require a significant decentralization of authority. In effect, some of the decisionmaking would be taken out of the hands of the Mayor and the Council and turned over to Revenue Center managers and workers.

In many ways, this shift reflects a growing trend among private corporations, which are providing the managers of their business units with broad management authority. Top managers are learning that tight centralized control is not only costly in terms of staff and paperwork, but it also inhibits the ability of business units to raise productivity and respond flexibly to changing circumstances. The Saint Paul-based 3M Company has long had a policy of letting no business unit expand beyond a few hundred employees.

It is clear that Revenue Centers will demand a different style of management. This section considers ways of strengthening the role of Revenue Center managers in order to provide them with the authority they need to carry out their responsibilities.

We begin with a description of “contracting in,” which we believe is the most desirable way of structuring relations between the central administration and the Revenue Center. Next we look at changes in the city’s personnel practices and policies that would be needed under this new form of organization.

Concern has been expressed over the effect decentralizing authority and strengthening the role of Revenue Center management would have on accountability to elected officials and the public. Accordingly, we conclude this section with an examination of mechanisms for keeping Revenue Center managers answerable to citizens and the city’s top leaders.
CONTRACTING IN

The agreement in which a Revenue Center provides essential services in exchange for General Fund revenues has to meet three requirements: First, it has to guarantee that the agreed-upon level of essential service actually is provided. There has to be a mechanism for monitoring Revenue Center performance so that elected officials can be sure of getting what they are paying for and can exercise appropriate policy control over the Revenue Center's actions. Second, it has to preserve the incentives for Revenue Center managers and workers to be innovative. Finally, the agreement has to be flexible enough to allow adjustments to changing circumstances.

Monitoring Performance

The key to monitoring the performance of Revenue Centers is the ability to measure the quantity of services provided. Good output measures make it possible to define precise performance targets and measure the degree to which those targets are being attained. Defining the level of output for city services is not always easy, however. Municipal services cannot be weighed or counted like potatoes or cans of peas. Consequently, efforts to quantify service levels have had to rely on indirect methods. A huge literature has grown up that deals with the problem of measuring service outputs and agency performance.¹

The central administration needs a method of monitoring performance that does not depend directly on the level of expenditures by the Center. It may be possible to use a combination of several of the kinds of measures discussed in Section II.

At the start of the budget period, the central administration and the Revenue Center should agree upon a set of performance targets for subsidized services. Revenue Center management would have to report annually on what the Center has accomplished and explain any discrepancies between performance and the agreed-upon goals. If the Revenue Center met the performance targets at a lower cost than was originally set, the difference would represent retained earnings. If the Revenue Center had trouble meeting the targets, it might have to divert some of its other revenue to subsidize certain services.

¹For a full discussion of the issues, see Frederick O'R. Hayes et al., Linkages: Improving Financial Management in Local Government, Urban Institute Press, Washington, D.C., 1982, Chap. 7. For a discussion of how to establish performance measures for city services, see Section II above.
Preserving Incentives

Managers and workers must be given assurance that they will be able to enjoy a significant portion of the benefits generated by their efforts. The surest way to remove the incentive to improve productivity is to reduce this year's General Fund contribution by the amount of last year's surplus. Thus, the central administration will have to change the way it budgets for essential services. That means moving toward some form of multiyear funding.

Under the scheme we envision, the agreement between the central administration and the Revenue Center for the provision of essential services would cover a period of several years. The amount budgeted initially would be subsequently updated on the basis of a spending plan contained in the initial agreement. In most cases, the projected increases in general revenue support will follow changes in the prices of the inputs used to produce the service. In some instances, the central administration and the Revenue Center may agree on a declining real level of General Fund support, in the expectation that Revenue Center productivity will improve.

This type of budgeting gives managers and workers a bigger stake in productivity improvements. If they find a way to provide the agreed-upon level of service for less than the budgeted amount, they have a substantial period of time in which to share in the savings.

A multiyear spending plan would also provide a better basis for evaluating the performance of the Revenue Center and the workforce. Averaging over several years makes it less likely that the results of one unusually fortunate year will be used to establish an impossible standard of performance. If a Revenue Center generates a surplus for several years in a row, informed judgments can be made about the costs of providing essential services and the level of performance that is sustainable over the long run.

Agreements between Revenue Centers and the central administration will have to be renegotiated from time to time, and should reflect the productivity gains that have been made. If managers and workers can perform on a sustained basis at a higher level than anticipated, they should be expected to perform at that level. This means that eventually Revenue Center savings will be returned to the General

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2The cost forecasting methodology developed in Phase I of the Rand-Saint Paul project can be used to develop service-specific price indexes. The analysis of the pilot Traffic and Lighting Revenue Center reported in Appendix A assumes that general revenue support will increase in line with the expected increase in the cost of service provision as forecast by the methodology.

3Of course, during this time, the General Fund would also receive a share through taxes on retained earnings.
Fund, where they will in effect represent new "income"—money that is available for new purposes.

The incentives for improved performance would be strengthened if managers and workers were given a share of that long-term income stream, i.e., received increases in their base salaries. This could be accomplished by basing salary increases in part on past Revenue Center performance.

Maintaining Flexibility

The problem with multiyear spending plans, like any kind of long-range planning, is that priorities and conditions can change, rendering plans obsolete. It is difficult to foresee the problems that may arise several years in the future or the resources that will be needed to deal with them. If a plan is too rigid, it will be shattered by changing events. It must be adaptable to changing needs and circumstances.

In Saint Paul's case, the agreement between the Revenue Center and the central administration should contain explicit provisions for dealing with revenue shortfalls. It is unrealistic to expect a Revenue Center budget to remain untouched when other departments are receiving major cuts. It would be possible, however, to limit the cuts in Revenue Center budgets to the average cut sustained by all General Fund activities. Such a limitation would assure managers that their success in raising other revenues would not cause their contribution from general revenues to be cut.

When budget problems or changing administration policies require a renegotiation of the agreement with the Revenue Center, changes in General Fund support must be accompanied by a redefinition of the services to be provided. In the face of a budget cut, all parties to the agreement should agree upon which services will have to be reduced. In this way, they can maintain the output and performance orientation that forms the basis for the concept of "contracting in."

Potential Problems

Many public services lack a well-defined unit of measure and therefore may not lend themselves to the type of performance monitoring described above. There are essentially two ways in which the central administration can deal with such services. It can appropriate a lump sum of money and turn control of service provision completely over to the Revenue Center. Alternatively, it can earmark funds provided to the Revenue Center for particular services.
The first approach leaves the incentives to cut costs and raise revenues intact, but it provides no assurance that the quantity and quality of essential services will be maintained. In the extreme case, Revenue Center management could simply ignore essential services and pocket the money. Clearly, this arrangement gives them a great deal of responsibility. City workers and managers generally define their jobs and sense of purpose in terms of the services they deliver to the public, however, so there is probably little danger that citizen needs will be neglected. In other cases, even in the absence of hard performance measures, it may be possible, through watching expenditures and monitoring public reaction, to get a good sense of how well the Revenue Center is performing. Here, the benefits of preserving incentives may well outweigh the possible danger of delegating too much control to the Revenue Center.

The second approach maintains more accountability over the use of General Fund support. In specifying a minimum level of expenditure, the central administration weakens Revenue Center incentives to control costs. However, it preserves the incentives to raise additional revenue. Thus, under this arrangement, the Revenue Center is still likely to diversify its funding sources.

It may be difficult to apply the concept of “contracting in” to cases where a service has both public and private good components (e.g., the treatment of contagious diseases) or when a broadly defined service area contains particular components, some of which are public goods and some of which are private goods, e.g., the public libraries’ provision of both reference services and copying facilities. Although, in principle, these components can be treated separately, in practice, some parts of their production and distribution are so intertwined that separate treatment is not feasible.

For such mixed services, the General Fund support provided to the Revenue Center should cover a fraction of the costs of producing the service commensurate with the public benefit that service provides. Determining the fraction is of necessity an imprecise process, and ultimately the judgment will have to be made by the city’s elected officials. The share of the cost used to produce the private good component of the service would then be covered by own-source revenues such as fees and charges.

The simplest way to provide General Fund support for mixed services is for the central administration to appropriate a fixed sum of money sufficient to cover a share of the expected costs of providing the service. The amount of General Fund support provided could also be linked to the quantity of services produced, in effect providing the Revenue Center with a bounty for every client it serves. In the
infectious disease example, the Center’s income would depend on the number of patients treated. For each treatment, the Revenue Center would collect a fee from the patient and a transfer from the General Fund that together would be sufficient to cover the costs of providing the service.

THE ROLE OF CITY WORKERS

Revenue Centers could be installed and operated successfully within the current personnel structure in Saint Paul. However, adoption of the recommendations of the Personnel Issues Task Force¹ would enhance the Revenue Center approach, because it would improve flexibility, responsiveness, and morale in city operations.

Employees of Revenue Centers would be asked to cooperate in efforts to raise productivity. These efforts are critical to restoring the city to financial health, partly because money is tight and the city must make available funds go farther to carry out its day-to-day operations. However, productivity gains are also important because of their effects on the Center’s ability to raise new revenue. Citizen willingness to pay will depend upon the price charged, and hence there will be pressure to contain costs. Citizens are also interested in the costs of providing the essential services that are financed from general revenues. Their willingness to approve additional taxes will be influenced by perceptions of the quality of the services their tax dollars are buying. It is the perception that money is not being well spent, rather than any absolute inability to pay, that has formed the basis for most of the tax-relief movements around the country. A well-run organization enjoying growing productivity has an easier time raising revenue from its customers and making its case to the city’s elected officials during budget hearings.

In return for their cooperation, Revenue Center employees should enjoy a more stable and more satisfying work environment. By tapping new sources of income, Revenue Centers can strengthen both their own finances and those of the city as a whole. In this way, they can help to halt the loss of jobs the city has experienced in recent years. Revenue Center workers will have a greater say in the decisions that affect them and greater control over their work environment. Finally, with their more varied product line and more entrepreneurial style, Revenue Centers will offer workers more opportunities for career development and advancement.

Efforts to improve Revenue Center productivity could take several forms. Most important, workers will be asked to share their knowledge and experience. They can expect some changes in procedures for hiring and promoting employees. Finally, they may be asked to take on a wider range of assignments than before.

Worker Involvement

The knowledge and experience of the city's employees is an immensely valuable resource for improving Revenue Center operations, expanding productivity, and strengthening finances. The people who do the work have a detailed knowledge of actual conditions and can develop practical suggestions for ways to improve the workplace. They enjoy direct day-to-day contact with consumers of services and are therefore in a good position to provide essential market intelligence about the services Revenue Center customers want and need.

A Revenue Center's style of operation should encourage active and open communication between workers and management and should provide workers with a strong voice in decisions affecting them.

Staffing

To attain their maximum potential, Revenue Centers will have to take a new approach to hiring and promotion (see the report of the Personnel Issues Task Force). Problems with the city's present system are already interfering with the conduct of city business, and their effects on the operation of Revenue Centers, which demand high levels of flexibility and performance, could be far more serious.

A number of key functions must be performed well if the city is to function smoothly and effectively. The personnel system must be able to match employees and jobs. This is equally important to management and to labor. Management needs to find the right employee for the job—someone who can competently meet the demands and responsibilities of the position. Labor needs to find the right job for the employee—a job small enough that the employee is not left to “sink or swim,” but large enough to provide challenge and room for career growth. Inability to make these matches will lead to floundering or frustrated employees, poor performance, low morale, and ultimately the inability to retain the talented workers that the city needs.

The city's personnel system must provide opportunities for growth and advancement. This issue is also of equal concern to management and to labor. Employees in Saint Paul tend to stay with the city government for most of their careers. Most of the candidates for top
positions within the city have "grown up" as Saint Paul employees. Failure to provide employees with opportunities for professional development will choke off the supply of qualified people for leadership positions. It will also deprive employees of one of the most important elements of job and career satisfaction. The result ultimately will be a badly run city government that fails to provide either adequate services to the public or a satisfying environment for employees.

The personnel system must be able to meet changing needs in a timely and flexible manner. Long delays in preparing examinations and generating a list of candidates for open positions interferes tremendously with the functioning of city government. An employee who has outgrown his or her job and is ready to assume greater responsibility has a similarly immediate need. Excessive delays and arbitrary restrictions on eligibility for higher positions harm morale and lower performance.

A recent survey of city employees in Saint Paul elicited numerous complaints about the extent to which hiring and promotion decisions were based on irrelevant criteria. Many of the civil service examinations are outdated, emphasizing skills that are no longer used and ignoring abilities to use modern equipment and procedures. Decisions are often made on the basis of factors that bear no relationship to performance, such as number of years on the job or tenure within a specific department. Promotions and merit pay increases are not based sufficiently on on-the-job performance.

MAINTAINING ACCOUNTABILITY

Decentralization of authority in the public sector raises special questions of accountability. Revenue Centers would pursue multiple goals to a much greater extent than private businesses. For this reason it will be harder to evaluate their performance. In addition, Revenue Centers would receive and benefit from public resources, and thus they must be held accountable for how those resources are used. All Revenue Centers would benefit from the city's tax-exempt status, and most would depend upon some amount of general revenue support. Revenue Centers must therefore remain answerable to the public they are supposed to serve. Members of the Responsive Services Task Force for the Saint Paul project have expressed special concern over the problem of maintaining accountability. The importance of accountability dictates that explicit attention be paid to mechanisms for maintaining control over Revenue Centers.
For many years, as part of its budget process, Saint Paul has required department and division heads to make explicit statements about the overall goals of their organizations and the objectives they hope to accomplish in the coming year. These statements are intended to strengthen management control, and they serve this function well. Submission of the statements provides an occasion for discussions between department and division heads and the city's top management, during which both sides can come to a common understanding of the mission of the organization. Later on, goals and objectives statements can provide a basis for evaluating the organization's performance.

We expect Revenue Centers to go through the same process. Drafting a statement of goals and objectives will force the Revenue Center to define its mission. Review of that statement will give top management a chance to approve or disapprove of the plans, or to redefine the Center's mission, if necessary.

A Revenue Center's budget, like that of all the city's Special Funds, should be subject to review and approval by the Mayor and the Council. The city's normal budget review process will provide an occasion for examination of the Center's activities, plans, and financing. At this point, elected officials can look for potential problems and make changes where necessary.

To a much greater extent than traditional city departments, Revenue Centers will be subject to the constraints imposed by market forces. They will have to be able to sell their services to consumers; if their product lines do not contain what people want, or if their costs are out of line, their services will not sell. The necessity of raising funds for their operation will force them to be responsive to citizen demands. In this way, the people of Saint Paul will directly hold Revenue Centers accountable.

We have recommended that fee increases for monopoly services be subject to approval by the Mayor and the Council. Submission of requests for fee increases will subject the Revenue Center to direct oversight and review by top management and will ensure that Center operations are conducted in accordance with their wishes.

The relationship that we have called "contracting in" provides explicit mechanisms for assuring that the quantity and quality of services provided are consistent with policies set by the city's leaders. The mechanisms for monitoring and reviewing Revenue Center performance are specifically designed to guarantee accountability for the use of General Fund revenues.

It is worth emphasizing, finally, that even though Revenue Centers would be given more freedom of action than city divisions, ultimate authority should remain in the hands of the Mayor and the Council.
Nothing in any of the arrangements described in this report prevents the city's top management from intervening in Revenue Center operation and taking over direct control. Thus, if a Revenue Center begins to engage in activities that are not in the best interests of the city or its citizens, it can be ordered to stop. Top management has no shortage of authority with which to enforce such an order. The possibility of direct intervention, even if it is not exercised, serves as a powerful constraint on Revenue Center behavior. In combination with the other mechanisms described above, it provides an ample guarantee that public accountability will be maintained.

We believe that in most cases these mechanisms of control and oversight are sufficient to maintain accountability by Revenue Center staff and management. This does not mean, however, that the city's top leaders can cease to pay attention to what their subordinates are doing, or that there is no chance of a Revenue Center ever going astray. The greater authority enjoyed by Revenue Center management will make it easier for unscrupulous individuals to engage in empire building, favoritism, and other undesirable activities. Although the mechanisms described above offer reasonable safeguards, civic leaders must decide how much trust they are willing to place in their employees.
V. SETTING UP A REVENUE CENTER

The preceding sections have discussed in some detail what a Revenue Center is and how it is supposed to work, but they say relatively little about how to set one up. This section presents an overview of that process, followed by detailed discussions of each of the steps. The section concludes with an outline that can serve as a guide to department heads and city officials.

ACTION OVERVIEW

The process of setting up a new Revenue Center involves six major steps:

- Definition of service responsibilities
- Planning of revenue ventures
- Development of an asset inventory
- Development of a steady-state budget
- Development of a financing plan
- Drafting of the Revenue Center charter

The first step involves what management expert Peter Drucker calls “deciding what business you are in.” The definition of service responsibilities should not consist of a laundry list of specific services, but rather should describe the inner logic of the mission of the Revenue Center. The sense of mission embodied in the definition of service responsibilities is an important aid in striking the appropriate balance between service to the public and revenue generation.

Any revenue ventures included in the Revenue Center must be planned out in sufficient detail to assure that they will be able to get off to a successful start. Although a Revenue Center does not necessarily have to include a revenue venture, we anticipate that in many cases, a new venture will form the kernel around which the Center is organized. Thus, the second step in setting up a Revenue Center is to plan the new venture.

The third step is the development of an inventory of capital assets. Having defined service responsibilities and having planned the revenue ventures, leaders should have a clear idea of what infrastructure, buildings, supplies, and equipment the Revenue Center will need to carry out its job. This idea must be formalized into an inventory of assets.
that will form the basis for estimating the Center's annual capital costs and preparing its initial balance sheet.

The fourth step is a comprehensive review of the Revenue Center's finances, including total estimated costs of operation, current sources of revenue, services whose revenue yield can be increased, and estimated final General Fund requirements. The result will be a budget of the mature Revenue Center.

The fifth step is to consider both startup costs and the rate at which new sources of revenue can be brought on line. The final product of this step is a multiyear financing plan designed to cover startup costs, provide adequate reserves of working capital, and avoid cash deficits during the Revenue Center's critical early years of operation.

The last step in setting up a new Revenue Center is the drafting of its charter. This charter formalizes the plans, assumptions, and estimates developed in the earlier steps and defines the working agreement between the Revenue Center and the city's administration. It should describe what the Revenue Center hopes to accomplish, what support it will need from the central administration and other parts of city government, how any surpluses it generates will be shared, and what criteria will be used in evaluating its performance and deciding whether or not it is a success. This step must, of course, be carried out in close collaboration with the Mayor and Council.

This general outline naturally needs to be tailored to the specific characteristics of the Revenue Center under consideration. The relative importance of the different steps will vary from one case to another, and in some instances the logic of what is being proposed may add additional steps to the implementation process. We think, however, that the steps outlined here provide good general guidance. The application of these concepts to the specific cases of two pilot Revenue Centers in Saint Paul is described in Appendixes A and B.

The six steps in the implementation plan are presented above as though each follows sequentially and logically from the preceding one. In any actual implementation, however, a trial-and-error process will be required. Analysis of the new Center's finances, for example, may uncover problems that lead to a redefinition of its service responsibilities. In moving through these steps, the goal must be to develop a well-thought-out and internally consistent proposal that is politically, financially, and operationally feasible.

We now discuss in more detail what each of these steps entails.
DEFINITION OF SERVICE RESPONSIBILITIES

An important element in striking an appropriate balance between service to the public and revenue generation is the identification of the inner logic of the Revenue Center's service responsibilities. Those services should fit together naturally, in terms of clients, required skills and equipment, or perhaps the shared use of a common facility.

Organizing a Revenue Center around a particular set of service consumers can provide a strong focus. Revenue Center staff would tend to build close relationships with customers and to develop a sophisticated understanding of their needs and concerns. The staff would then be well able to anticipate customers' needs.

In more technical areas, it may make sense to organize a Revenue Center around a set of services whose provision requires similar skills and equipment. Although this alternative weakens the customer orientation of the Revenue Center, it encourages the staff to maintain a high level of technical competence and may increase the likelihood of identifying and redeploying underutilized resources. (The pilot Revenue Center for Traffic and Lighting, described in Appendix A, is organized in this way.)

In some cases, it may make sense to organize a Revenue Center around a particular facility, building, or complex. If the potential uses of the facility are diverse enough, the only connection among the services provided may be the facility itself. (The proposed Revenue Center for Parks and Recreation, described in Appendix B, is organized around Saint Paul's Municipal Athletic Facility.)

Regardless of the particular organizing principle adopted, the definition of service responsibilities should be carried out in such a way as to allow the Revenue Center staff to state simply and clearly what they do. This helps provide a frame of reference as they explore new service possibilities and attempt to develop new sources of revenue.

PLANNING OF REVENUE VENTURES

Initiating a revenue venture is like starting a new business. To be successful, the venture must be carefully planned. That planning process comprises a number of distinct steps.

**Identifying the Market.** Revenue Center management should form a clear picture of who will purchase the services provided by the venture, in terms of neighborhood, income, age, interests, etc. Planners must then try to estimate the size of the potential market. How many customers are there? How much might each be expected to spend? What share of the market might the venture capture? These
questions, particularly estimating market share, require subtle judgment. Planners should ask themselves what advantages the venture will offer relative to other suppliers. They should also examine the city's share of markets for related services. Such figures will enable a rough estimate to be made of the venture's revenue yield.

**Developing a Marketing Plan.** An explicit plan should be developed for selling the services of the new venture. Planners should determine how they will contact potential customers and what forms of advertising they will use. They should also determine how best to package the service. In the case of recreational activities, for example, they may have to choose among daily, weekly, or seasonal passes. Finally, planners should explore alternate pricing strategies, checking them for consistency with estimates of market-share revenue potential.

**Identifying the Production Requirements.** What will it take to produce the services? Consideration should be given to staffing requirements, including line workers, supervisors, and managers, as well as equipment, supplies, and building space. If the venture requires any construction, details of design, timing, and cost will have to be worked out carefully. Planners should also consider whether the staff of the new venture will need new training.

**Identifying the Financial Requirements.** Developing a financial analysis for the venture will help pull together the results of the preceding steps. The process of financial-analysis development is as follows:

- First, cost estimates should be derived from the analyses of production requirements. It is important to distinguish fixed costs from costs that vary with the level of operation, since the relationships between the two will affect the venture's breakeven point.
- Second, the price that would have to be charged in order to cover costs must be compared with the prices that customers will be willing to pay.
- Third, planners must establish reasonable levels for working capital reserves, taking into account both the timing of costs and payments—whether customers will pay "up front" or be billed after use of the service—and the degree of uncertainty associated with the venture.
- Fourth, a forecast of cash flow for the venture should be developed, taking into account startup costs, the time that will elapse before sales start, the rate at which sales will grow, and the relationships between fixed and variable costs during the startup process. For ventures that will take a number of years
to reach maturity, planners should factor into their forecast the
effects of inflation on both costs and revenues.

- Fifth, based on forecasts of cash flow, planners must determine
  how much the venture will have to borrow in order to meet
  startup costs and maintain a positive cash balance during early
  phases.
- Finally, planners should estimate the date at which the venture
  will attain maturity and the net revenue it can be expected to
  generate by that time.

DEVELOPMENT OF THE ASSET INVENTORY

A capital asset inventory should include fixed infrastructure invest-
ments, buildings, machinery, vehicles, and supplies. Development of
such an inventory requires careful thought about Revenue Center
operations and therefore serves much the same function for the Reven-
ue Center that the analysis of production requirements serves for the
revenue venture. A detailed list of capital assets is also required for
preparation of the Revenue Center balance sheet. Finally, the asset
inventory provides the basis for estimating annual capital costs for
depreciable items. Those costs will play a key role in the setting of
service charge levels.

The steps in the development of an asset inventory are described
below.

Listing Capital Assets. The list of capital assets should include a
full description of physical characteristics and quantities.

Estimation of Current Asset Values. An estimate of current
market value should be prepared for every asset in the inventory.
"Current market value" is defined as the value of the asset in a well-
developed market. For assets such as vehicles, supplies, and
machinery, the estimation of market values is straightforward. The
process of estimating values for assets such as infrastructure that are
never sold and for which markets do not exist is more complex.

The estimation of "market" values for nontraded assets is based on
replacement cost, defined by what the city would have to spend to pur-
chase a new asset of the same type and description, and book value,
defined as the original acquisition cost, with adjustment for wear and
tear. Replacement cost will exceed "market" value, because the latter
reflects the effects of wear and tear. Book value will usually fall short
of "market" value, since it fails to account for inflation. In recent
years, inflation has tended to raise asset values faster than wear and
tear has reduced them. "Market" value for nontraded assets can be
approximated by increasing depreciated book value to reflect the effects of inflation, or by reducing replacement costs to reflect the effects of wear and tear.

**Identification of Depreciable Assets.** It is important to flag the items in the asset list that should be depreciated. Depreciable assets consist of major structures, fixed investments, and pieces of equipment that wear out slowly. Nondepreciable assets are inventories of parts or supplies that roll over and are replenished continuously.

**Estimation of Remaining Lifetimes.** Estimates of remaining useful lifetimes should be prepared for each of the depreciable assets in the inventory. The estimating process will interact with the process of determining current market value. Dividing market value by the number of years of remaining useful lifetime should give the same result as division of replacement cost by the expected useful lifetime of a new asset of the same type.

**Estimation of Annual Depreciation.** Estimates of annual depreciation costs should be computed for each of the depreciable assets in the inventory by dividing estimated current value by remaining useful lifetime.

**DEVELOPMENT OF A STEADY-STATE BUDGET**

**Estimation of Full-Service Costs.** Revenue Center planners should begin by assembling information on budgeted costs for the services they produce. Initially, Special Fund and General Fund services should be kept separate. For new services provided as part of a revenue venture, planners can use the estimates produced for the venture plan.

A number of adjustments will be needed to turn figures on budgeted costs into unbiased estimates of direct service costs. In the case of General Fund services in Saint Paul, estimates of fringe-benefit costs must be included. For all services, support service costs must be calculated and included. Finally, planners should add in the annual capital costs of all depreciable assets used in the provision of Revenue Center services.

To get from direct costs to full costs, appropriate allowances for overhead costs must be added. Planners should estimate future Revenue Center overhead costs, using established procedures for Special Fund activities. Combining budgeted costs with fringe-benefit and support service costs, annual capital costs, and overhead costs will give the full costs of operation for the new Revenue Center.
Listing of Own-Source Revenues. Components of own-source revenues include earmarked funds, enterprise income, venture income, and beneficiary charges. The amount of each form of revenue that will be available to the Center should be computed.

Review of Beneficiary Charges. Are the private goods services offered by the Revenue Center priced appropriately? Are there services now supported by the General Fund that ought to be "sold"? Answering these questions requires preparation of a complete inventory of Revenue Center services. Initially, the completeness of the inventory is more important than the level of detail it contains.

Each of the services in the inventory should be evaluated using the checklist presented in Section II to determine the relative magnitudes of the public and private benefits it provides. In conducting this evaluation, planners should solicit the active involvement and cooperation of citizens, neighborhood groups, and businesses.

At this stage in the process, planners have an estimate of the full cost of operation of the Revenue Center. The costs should next be allocated over the individual services in the inventory. The city's programmatic budget, adjusted appropriately to include capital costs, will provide a good basis for dividing total costs among individual services. In cases where the service inventory contains more detail than the budget, cost estimation may require special studies or the use of departmental records on direct service costs.

Multiplying the private-benefit fraction by the cost of production provides a target figure for revenue to be raised from consumers of that service. Revenue targets should be compared with the amounts actually received from service consumers. Services for which revenues fall significantly short of targets are likely candidates for new or more extensive applications of benefit-based finance. Planners should review these services carefully and identify ways to increase their revenue yields.

Next comes the examination of services for which beneficiary charges are in place, or have been proposed, to identify those that might have significant impacts on disadvantaged members of the community. Charges for these services should be reviewed to determine the applicability of the techniques discussed in Section II for mitigating adverse impacts. From this review, an equity protection plan should be developed.

Estimate General Fund Requirements. How much General Fund support will the Revenue Center need for its ongoing operations? This sum is equal to the full cost of operation for the Center less own-source revenues.
The determination of the required level of General Fund support should lead to an agreement with the central administration that will govern its provision. The first element of this agreement is a statement of what services these funds will pay for. The second element of the agreement is a structure for accountability. If the General Fund is paying for a limited number of largely public services, accountability should be maintained through a "contracting in" agreement, with specific performance goals. Where the General Fund is covering part of the cost of a large number of services, the specification of performance goals is likely to be more difficult. In such cases, accountability requires reviews by the central administration of the extent to which the Revenue Center is meeting its public responsibilities.

DEVELOPMENT OF A MULTIYEAR FINANCIAL PLAN

Providing Revenue Centers with adequate financing for their startup period requires a dynamic forecast of costs, revenues, and financial needs.

Forecast of Expenditures. Planners should prepare a forecast of expenditures during the Revenue Center's initial years of operation. That forecast should include both operating and capital costs. For the most part, preparation of the forecast involves little more than a direct application of the cost forecasting models developed in Phase I of the Rand-Saint Paul project.¹ Some special provisions will have to be made for revenue ventures to take into account special patterns of cost growth during startup periods resulting from the provision of new services. It should be possible to use the analyses prepared as part of the revenue venture business plan.

Forecast of Revenues. Planners should prepare a multiyear forecast of revenues. Existing forms of own-source revenue can be projected, using the revenue forecasting techniques developed in Phase I. For current beneficiary charges, planners will have to decide whether revenues are likely to grow in parallel with overall inflation or with growth in the costs of production. In the case of new sources of income, the forecasts will have to account for the time needed to build up the revenue stream. For revenue ventures, the business plan should provide estimates of when income will start to flow and hence can help in preparing forecasts of revenues.

Planners will have to make some assumptions about trends in General Fund support. Although decisions about such support will clearly

¹Fernandez, Neela, Caggiano, Pascali, and Hillestad, op. cit.
depend upon political factors, planners should assume that it will grow in step with increases in production costs for services that the General Fund pays for. This assumption is a good neutral starting point for discussions with the central administration.

**Determination of Working Capital Needs.** The financial plan should include how much working capital will be needed to guarantee smooth and financially sound operation. That calculation should reflect the mix of revenue sources the Center will rely upon, lags between expenditures and receipt of revenues, and the degree of variability in both expenditures and revenues. The Budget Office can help determine the level of reserves that is appropriate for the type of operation that the new Center will represent.

**Determination of Borrowing Needs.** Given the forecasts of expenditures and revenues, planners should determine the level of initial capital needed to meet startup costs, pay bills, and maintain adequate working capital reserves while new sources of income are being developed.

**DRAFTING OF THE REVENUE CENTER CHARTER**

The drafting of the charter in many ways represents a summing up and formalizing of the preceding steps in the planning process. The charter will describe the relationship between the Revenue Center and the city as a whole. It should contain the following elements:

- **Definition of service responsibilities.** A statement of purpose, not a laundry list of individual services.
- **Revenue Center balance sheet.** A list of the Center's assets and liabilities, drawing on both the inventory of capital assets and analyses of working capital needs and initial financing requirements.
- **Definition of own-source revenues.** A list of the existing revenue sources that will be turned over to the Center and an outline of plans for development of new sources of income.
- **Revenue venture business plan.** A detailed description of any revenue ventures associated with the new Center.
- **Description of General Fund arrangements.** A description of the Center's General Fund requirements, both initially and over time. It should explain how the Center will account for its use of General Fund revenues and describe any contracting-in agreements between the Center and the central administration. It should also describe performance measures for public services and any related provisions for periodic reviews of Revenue Center operations.
• Description of provisions for surplus-sharing. An explanation of how end-of-year surpluses will be divided among the General Fund, workers, and the Center itself.

• Evaluation plan. Provisions for evaluating the mature Revenue Center to determine whether it has been successful in meeting its goals and whether it deserves continued support. That plan should specify a review date far enough in the future to include some period of mature operation before evaluation. The review itself should consider changes in service provision, growth in revenues, improvements in efficiency, revenue venture profitability, and measures of satisfaction among the people and businesses the Center has served. On the basis of the review, a decision should be made about whether to continue or dismantle the Revenue Center. If the Center is continued, the city should decide whether to expand or contract its responsibilities and whether to adjust the level of General Fund support or revise the Center's charter.

• Validation. Submission of the Revenue Center charter for review by citizens, the Mayor, members of the City Council, the Budget Director, and the Director of Finance and Management. Department and division heads or their representatives should also be intimately involved in the planning and review process.
VI. CONCLUSIONS

The Rand-Saint Paul project was initiated in the expectation that it would result not simply in a report, but rather in significant changes in the way the city conducts its business. The job of making these changes falls on the citizens, employees, managers, and elected officials of Saint Paul, and in a very real sense, it is just beginning.

The move toward Revenue Centers has already begun. Although the model described in this report is designed to be implemented as a whole, its individual components can also strengthen the city's finances and improve its performance. Some of the ideas discussed above are already being acted upon. Others could be implemented in an evolutionary fashion.

The city has begun to build revenue-consciousness among its corps of managers. Development and submission of revenue-raising proposals should become a regular element of the budget process. It is now feasible for the city to add a financial dimension to its present system for establishing goals and objectives. Saint Paul's enterprise fund managers could be asked to establish targets for end-of-year retained earnings. This would help to build an orientation toward the bottom line and would be a step toward making Revenue Centers a reality.

The city should also adopt an official policy regarding the disposition of retained earnings. We salute the spirit behind its current policy of leaving retained earnings in the hands of the enterprise fund managers as discretionary funds. However, we believe that retained earnings could also be used to meet other important needs. Serious consideration should be given to the possibility of setting aside a portion of retained earnings to fund worker training and merit pay increases. If Saint Paul's fiscal condition once again becomes acute, the city should consider the possibility of levying a progressive internal tax on retained earnings to help protect the city's general revenue base.

The city has recently taken a major step toward adoption of the Revenue Center model through its decision to permit General Fund activities to carry a portion of their unexpended funds over into the next fiscal year. This decision marks an important event in public administration generally. With it, Saint Paul has taken a deliberate step away from the "use it or lose it" attitude that has characterized many governmental organizations.

Policies regarding retained earnings and unexpended fund balances will become more meaningful as the city moves closer to full-cost
accounting. Although Saint Paul has made great progress toward budgeting the full costs of the services it provides, additional steps could be taken. The city should consider treating fringe benefits in the General Fund as they are treated in the Special Funds. These costs should appear beside wage and salary costs in individual activity budgets. Also, consideration should be given to the possibility of including central service costs in the budgets for General Fund activities. Although such a change would admittedly create a whole set of paper transactions, it would improve comparability between the General Fund and Special Fund budgets, present a more accurate picture of the cost of General Fund services, and raise the general level of awareness about central service costs and quality. Finally, the city should consider treating departmental and divisional overhead costs in the same way that it treats central service costs. Budgeted expenditures would thus be turned into a much more accurate picture of true service costs.

The city could improve its cost accounting further by reviewing the way in which capital assets are carried on its books. In a number of instances, capital facilities are treated as general fixed assets even though they are used entirely by a single enterprise operation. Treating those facilities as enterprise fund assets would make it possible to levy depreciation charges and would bring budgeted expenditures more into line with true costs.

Saint Paul could benefit enormously from efforts to improve communications between departments at all levels. Many interesting and creative things are being done in Saint Paul, but all too often news of them fails to travel beyond the borders of the department or even the division within which they take place. The city needs to develop ways through which its managers can share their knowledge and experience.

The city should take vigorous action to improve the operation of its personnel system. The conditions identified by the Personnel Issues Task Force interfere with the ability of the city to meet the legitimate needs of its employees and to respond quickly and flexibly to changing circumstances. Such interference acts as a drag on the city's performance now, and it will constitute an even greater problem for future Revenue Centers, where responsiveness and flexibility are critical to effective performance.

Although the pilot Revenue Centers were assumed to begin operation in 1984, some time will be required before various features can be implemented. In the meantime, efforts should be undertaken to develop and implement ideas for new user charges that can later be turned over to the Revenue Centers. An early start would bring additional funds into the city's coffers, and would help to build the funding bases that the Revenue Centers will eventually have to rely upon.
The design for the Traffic and Lighting Revenue Center (see Appendix A) anticipates a substantial amount of business income. Developing this source of revenue will require time, research, legwork, and the cultivation of a new set of relationships. The management of the new Revenue Center should begin by talking to neighborhood groups and the businesses who use traffic and parking services to determine their needs. Division people should also talk with their peers in neighboring jurisdictions to share expertise, discuss possible joint ventures, and identify potential customers.

Spadework must likewise precede the establishment of service charges for street lighting. Exploration of the deferral option for lighting charges, needed to shield disadvantaged members of the community, demands special attention. We know little about the likely response to a deferral program or its probable impacts on cash flow for the pilot Revenue Center. For this reason, and because of the potential applicability of deferrals to other types of service charges, the city should consider implementing deferrals on an experimental basis in the existing street maintenance assessments programs. To limit the potential impact on the city's cash flow, the experiment could be restricted to a particular neighborhood. The results of this experiment would provide the city with valuable and otherwise unavailable information about how to design a full-scale program.

There are a number of alternatives for deciding what portion of the lighting system should be financed through the General Fund. Citizens and elected officials need to know what kind of lighting bills would be generated by the various alternatives. Once the lighting portion of the infrastructure inventory is operational, the Division should study the implications of different charge possibilities. It would be possible to compute hypothetical lighting bills for a range of residential, commercial, and industrial property types.

The city has already begun a detailed investigation of the feasibility and financial implications of construction of an inflatable "bubble" over the Municipal Athletic Facility. This investigation is being conducted using the city's own in-house expertise and resources. The Business Development Division of the Department of Planning and Economic Development is providing Parks and Recreation with technical assistance in the preparation of a business plan for the new facility. This relationship could serve as a model for future efforts by other branches of city government in launching new revenue ventures.

The act of setting up pilot Revenue Centers as enterprise funds can be performed at any time. Both the Division of Traffic and Lighting and the Municipal Athletic Facility currently have sizable own-source revenues. Setting them up on an enterprise basis would thus allow
them to start managing their revenues and learning the new style of operation that will eventually be required.

The action plan for Traffic and Lighting outlines a proposal for starting the Revenue Center in the Division's Traffic Operations branch, which generates most of the Division's current user charge income and has probably the most varied set of opportunities for providing new responsive services. This modest beginning would provide a low-risk way of starting the conversion to a Revenue Center form of organization.

The city has initiated a formal evaluation of the two pilot Centers. People at local universities have agreed to monitor the entire implementation process. The evaluation panel should comment on the advisability of extending the beneficiary charge/Revenue Center concept to other services. After the Revenue Centers have been in operation for a time, the city should solicit the reactions of its citizens to determine whether or not the change in organization has in fact improved responsiveness to consumer demands and needs.

The ideas discussed in this report could bring about a substantial improvement in Saint Paul's financial position. The design for the Traffic and Lighting Revenue Center projects a reduction in annual general revenue requirements of almost $2.5 million. Once it is fully operational, the recreation bubble could generate an annual operating surplus of almost $250,000. These two examples alone could, if fully implemented, make a substantial difference. We think however, that the potential benefits of Revenue Centers extend well beyond the two pilots. This style of operation could—and, we think, should—spread throughout Saint Paul. Almost every branch of city government has some revenue potential. Most branches have lacked the incentive or the opportunity to develop that potential. Encouraging a more entrepreneurial style of management could produce dramatic results citywide. Even if the typical city department could develop new own-source revenue equal only to 5 percent of its operating budget, this would make an enormous difference in the city's finances.

Perhaps more important, Revenue Centers have the potential to bring about significant improvements in the quality of the city's day-to-day operation and management. They provide an environment that encourages responsiveness to citizen demands, efficiency in the conduct of work, and innovation in management. Citizens will be offered a broader array of services; workers will enjoy a richer and more satisfying work environment; managers will have a chance to try out new approaches in an environment that provides more autonomy while demanding a higher level of responsibility.
Revenue Centers will encourage good management. While many of the ideas and concepts discussed here have been applied outside of the Revenue Center setting, we believe that they would find a more congenial home there. Revenue Centers provide workers and managers with a chance to show what they can do to improve service delivery and strengthen the city's financial position. They encourage and reward high levels of performance. Intelligently applied, they can be a powerful aid to Saint Paul in its search for excellence.
Appendix A

TRAFFIC AND LIGHTING REVENUE CENTER

The Division of Traffic and Lighting in Saint Paul has tentatively agreed to proceed with a pilot Revenue Center. It was decided to restrict this Center initially to Traffic Operations, because there was very little political support within the city for imposing street lighting service charges. Also, Traffic Operations is responsible for providing most of the Division's responsive services and therefore seemed to offer the best opportunities for initiating new revenue ventures. Finally, because of the Division's limited experience with enterprise operation, it seemed wise to limit the purview of the new form of organization.

The Traffic Operations Revenue Center will exemplify many of the design features discussed in the text. It will provide both essential and responsive services. It will draw its funding from a mixture of own-source revenue (earmarked funds, user charges, and enterprise income) and general revenues. This pilot Revenue Center offers possibilities for the initiation of revenue ventures; its supply of General Fund revenues will be regulated by contracting in.

Before presenting the action plan for the Traffic Operations Revenue Center, we shall discuss the larger concept of a Traffic and Lighting Revenue Center. We begin by outlining the services that the Revenue Center would be responsible for providing. The sources of revenue that the Center could develop and draw upon are discussed next. We then describe the managerial and organizational changes that would be needed to develop these sources of financing. Next we look at the costs of running such a Revenue Center, measure its continuing need for General Fund support, and forecast costs, revenues, and working capital requirements. The appendix concludes with the action plan for establishing the Traffic Operations Revenue Center.

SERVICE RESPONSIBILITIES

The boundaries of the Traffic and Lighting Revenue Center would be coterminous with the present boundaries of the Division of Traffic and Lighting. Thus, the Revenue Center would assume the service responsibilities now carried out by the Division, and all of the people who now work for the Division would become Revenue Center employees.
The Division is responsible for assuring the smooth and efficient flow of vehicular traffic through the city and the provision of lighting along city streets and in public places. It has four principal subunits:

- *Lighting Operations and Maintenance*, which is responsible for the operation and maintenance of the city’s 18,000 street lights.
- *Signal Operations and Maintenance*, which takes care of the city’s system of traffic signals.
- *Traffic Operations and Maintenance*, which is responsible for the other components of the traffic control system, including signs, striping, and parking meters.
- *Traffic Engineering*, which is responsible for traffic-flow analysis and planning and also houses the Division’s administrative functions.

Each of these subunits has accounts in both the General Fund and Special Fund budgets. In addition, Traffic Operations and Maintenance provides support services for the Division’s other activities.

**OPERATING EXPENSES**

We have estimated the costs for operating the Traffic and Lighting Revenue Center during the 1984 fiscal year, since this is the most recent year for which budget figures were available. These figures will later be inflated to reflect costs in 1985 and beyond.

Table A.1 shows the activities of the Division of Traffic and Lighting, with their 1984 proposed budgets and staffing levels. The proposed budget calls for total expenditures of $3.7 million and a workforce of 66.2 full-time equivalent (FTE) employees.

The move toward user charges and other forms of benefit-based finance will increase the Division’s administrative costs, since there will be more bills to send out and more financial transactions to process. To handle this increased workload, we included three new clerical positions (two accounting clerks and one clerical supervisor). As a result, the wages and salaries in our expanded budget differ from those in the proposed budget by $43,000 and three FTEs.

Neither the proposed budget nor the expanded budget accurately depicts the full costs of operation for the Division. Some of the Division’s costs now appear in other parts of the city budget, but if the Division operates as a Revenue Center, these costs will appear in its own accounts, so they are taken into account here.

The largest of these items is the cost of employee fringe benefits. For General Fund employees, these costs are combined and budgeted in
the general government accounts. To estimate fringe-benefit costs for Traffic and Lighting employees, we used the guidelines established in the city's 1984 statement of budget goals and policies.\(^1\)

The second largest item not reflected in the Division’s present budget is the cost of central support services. Saint Paul’s current procedures for recovering central service costs base the bills submitted to Special Fund accounts on a wide variety of factors, including number of employees, amount of office space used, and number of transactions processed by the Treasury and Purchasing Divisions. We estimated the actual costs on the basis of the experience of other Special Fund activities that are roughly representative of the Traffic and Lighting Division’s operations.\(^2\) The full costs of operation for the Division of Traffic and Lighting are shown in Table A.2.

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\(^{1}\) Proposed 1984 Budgets: Goals and Policies, op. cit.

\(^{2}\) These costs were estimated in three steps. First, we computed the ratio of central service costs to the nonelectricity portions of the budgets for Sewer Repair, Public Works Equipment Services, and Public Safety Equipment Services activities. We then applied this ratio to the nonelectricity portion of the General Fund budget for Traffic and Lighting. By averaging together the three activities, we minimized the effects of the idiosyncrasies of any particular operation. By using the nonelectricity portion of the budget, we eliminated the distortions caused by the huge expenditures for electricity that appear in the signal and lighting budgets.
Table A.2
FULL 1984 COSTS OF OPERATION FOR THE DIVISION
OF TRAFFIC AND LIGHTING
(thousands of dollars)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Wages and Salaries</th>
<th>Fringe Benefits</th>
<th>Central Service Overhead</th>
<th>Other* Costs</th>
<th>Total Costs</th>
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</thead>
<tbody>
<tr>
<td>02155</td>
<td>283</td>
<td>80</td>
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<td>100</td>
<td>29</td>
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<td>570</td>
<td>44</td>
<td>1,681</td>
<td>4,357</td>
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</table>

SOURCES: Proposed 1984 Budgets: General Fund and Debt Service Funds, and Proposed 1984 Budgets: Special Funds, City of Saint Paul, Minnesota. Fringe benefits for accounts 02155-02283 were estimated using guidelines published in Proposed 1984 Budgets: Goals and Policies, City of Saint Paul, Minnesota, p. 28. Central Service costs for accounts 02155-02283 were estimated by multiplying the sum of wage and salary, fringe-benefits, and other nonelectricity costs by an overhead rate computed from the Sewer Repair, Public Works Equipment Services, and Public Safety Equipment Services activities.

*These figures include supplies, equipment, fuel, and other expenses but exclude intracity transfers of funds, most of which represent one-time payments.

**Figure includes fringe benefits already budgeted in Special Fund accounts.

CAPITAL ASSETS

In addition to the operating expenses presented above, the Traffic and Lighting Revenue Center will require the use of an extensive array of capital assets, including hundreds of traffic signals, thousands of street lights, miles of electrical conduit, the Traffic and Lighting building, and a collection of vehicles and machinery. All of these assets wear out and eventually have to be replaced.

At present, replacement costs for the capital assets used by Traffic and Lighting are handled in two ways. Some appear in the operating budget. For example, the costs of the labor, paint, coatings, and sign
stock used to refurbish the Division's huge inventory of signs are part of the budget for Traffic Operations and Maintenance. Replacement costs of other assets, such as street lights, appear in the capital improvement budget. These replacement costs can be substantial. Between 1979 and 1983, annual expenditures for Traffic and Lighting capital projects averaged over $1.8 million in 1984 dollars.

To form an accurate picture of the costs of providing Traffic and Lighting services, we must consider the replacement needs generated as a result of the Division's operations. The annual cost of using a capital asset is equal to the current value of the asset divided by its remaining number of years of use. Setting aside this sum of money each year guarantees that there will be enough of a reserve built up to cover the cost when the asset needs to be replaced.  

Table A.3 presents estimates of values, useful lifetimes, and annual depreciation for the capital assets whose replacement costs are not included in the Division's operating budget. Street lights and traffic

### Table A.3

<table>
<thead>
<tr>
<th>Type of Asset</th>
<th>Estimated 1984 Value ($)</th>
<th>Average Useful Lifetime* (yrs)</th>
<th>Annual Depreciation ($)</th>
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<tbody>
<tr>
<td>Street lights</td>
<td>20,520,000*</td>
<td>40</td>
<td>513,000</td>
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<td>Lighting conduit</td>
<td>4,860,000*</td>
<td>30</td>
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<td>Traffic signals</td>
<td>17,280,000*</td>
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<td>2,651,243*</td>
<td>40</td>
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<td>870,000*</td>
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</tr>
<tr>
<td>Machinery &amp; equipment</td>
<td>500,000*</td>
<td>10</td>
<td>50,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>46,681,243</strong></td>
<td><strong>27</strong></td>
<td><strong>1,742,281</strong></td>
</tr>
</tbody>
</table>

*Estimates supplied by Traffic and Lighting staff.

*Taken from the Public Works Shareholder Report. Values were multiplied by 1.08 to reflect two years of inflation.

*Replacement cost from the 1982 Financial Report, multiplied by 1.08 to reflect two years of inflation.

*Total 1984 value divided by total annual depreciation.

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3 An accurate estimate of annual capital costs must be based on current asset values rather than original acquisition costs. Depreciation costs based on the latter fail to take into account inflation and its effects on eventual replacement costs.

4 The principal assets whose replacement costs are included in the operating budget are signs and parking meters.
signals are the largest items. Annual depreciation on Traffic and Lighting capital assets amounts to $1.7 million in 1984 dollars, slightly less than the city's annual expense for Traffic and Lighting capital improvements. The figures indicate that the city has upgraded these systems somewhat, a result that is consistent with views held by the Division's engineers.

OWN-SOURCE REVENUES

The success of the Traffic and Lighting Revenue Center would be measured by its ability to find and develop new sources of income. This section examines the Division's present sources of revenue and discusses how they could be expanded if the Division began to operate as a Revenue Center. We shall consider only own-source revenues, i.e., revenues generated as a result of the Division's operations or earmarked for the Division's use.

Currently, the Division's own-source revenues are treated as one of the sources of financing for the General Fund. They are put into the General Fund and then appropriated back to the Division of Traffic and Lighting. If the Division began to operate as a Revenue Center, these funds would be credited directly to its accounts.

The Traffic and Lighting Revenue Center would rely on four general categories of own-source revenues: earmarked funds, user charges, business income, and street lighting service charges. Earmarked funds come from grants dedicated for the use of Traffic and Lighting. Their amounts and uses are controlled by the organizations supplying them. User charges are the revenues that Traffic and Lighting receives from selling its services to consumers. Business income includes revenue generated by new ventures initiated solely for the purpose of making money. Street lighting service charges are a form of benefit-based finance that ties the financing of street lighting more closely to the level of service received by businesses and residences.

Earmarked Funds

Traffic and Lighting's main source of earmarked funds is the street and highway aid that Saint Paul receives from Ramsey County and the state of Minnesota to be used for the construction, maintenance, and
operation of the city's streets and highways. In 1984, the portion of this aid set aside for the city's traffic program amounted to $482,810.\footnote{Proposed 1984 Budgets: Analysis, op. cit., p. 61.}

The second largest source of earmarked funds for the Division is damage claims. When a private citizen runs his car into a light pole or traffic controller box, for example, Traffic and Lighting can collect damages from his insurance company. Revenues from this source in 1984 are projected to be $60,000. Total earmarked funds in 1984 are shown in Table A.4.

**User Charges**

Traffic and Lighting derives revenue from a number of different user charges. The amount of these revenues could be increased by imposing new charges or by increasing the rates for the current charges. Below, we consider the current yield and the ultimate potential of each user charge.\footnote{We suggest a number of increases in fees and charges. In estimating the effects of these changes on revenue yields, we assume for simplicity that no present service users will be driven away by the increases. Although the available evidence indicates that demand for these services is not very price-responsive, it is unrealistic to assume no fall-off in use. In developing an implementation plan for a Revenue Center, the city should conduct more detailed analyses of consumers' likely responses to fee increases.}

Traffic and Lighting's biggest user charge is its fee for on-street parking. It is estimated that the city's parking meters will take in

<table>
<thead>
<tr>
<th>Source</th>
<th>Amount ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traffic and lighting share of</td>
<td>482,810</td>
</tr>
<tr>
<td>street and highway aid</td>
<td></td>
</tr>
<tr>
<td>Damage claims</td>
<td>60,000</td>
</tr>
<tr>
<td>Total (all sources)</td>
<td>542,810</td>
</tr>
</tbody>
</table>

**Table A.4**

1984 TRAFFIC AND LIGHTING REVENUES FROM EARMARKED FUNDS

$810,000 in 1984. Of that amount, $278,000 is set aside for the Parking and Transit fund, leaving $532,000 for other purposes. Although it could be argued that a portion of that revenue should be used to cover the cost of collection of meter revenues by the Department of Finance and Management, most of it is clearly associated with the Division's operations. For this analysis, we have assumed that all of this revenue would be available to the Center. The yield from this revenue source might be increased, but there are pressures to contain parking rates in order to encourage people to come downtown. Because of these constraints, we assume that current yields are appropriate.

Traffic and Lighting generates about $30,000 per year from meter-housing fees. These payments cover meter revenues lost when parking along metered streets is prohibited in order to maintain space for special uses such as access to a construction site.

The city issues a variety of permits for use of the streets. The fee levels vary, but they average approximately $35. The Public Works Office Engineer estimates that 450 such permits would be issued in 1984, for a total revenue yield of $15,750. A relatively modest increase to $40 per permit would raise the annual yield to $18,000.

The fee for residential parking permits is currently $10. It is estimated that 500 such permits will be sold in 1984, for a total revenue yield of $5,000. When the fee was raised from $5 to $10, the number of permits sold changed very little, which suggests that fee levels could be increased further without impairing the effectiveness of the program. A fee level of $15 would raise the revenue yield to $7,500 and allow recovery of the costs of the program.

Traffic and Lighting currently provides temporary No Parking signs for $.50 each and expects to sell 2,400 in 1984, for a total revenue yield of $1,200. In 1982, the price of these signs doubled, but the number sold fell only slightly, indicating that this demand is also not very sensitive to price. Raising the price per sign to $2.00 would increase revenue yield to $4,800.

Traffic and Lighting has recently instituted a fee for curb parking controls. The charge to have a special curb parking zone established is $100, which covers the cost of investigating the situation and producing the necessary signs. The Division anticipates that it will process 250 such requests in 1984, for a total revenue yield of $25,000.

In addition to the user charges that are already in place, there are a number of opportunities for imposing new charges. The Department of Public Works estimates that billing utilities for time spent on traffic

---

7The 1984 budget analysis shows $840,000, but that amount includes approximately $30,000 in receipts from meter-housing fees.
control and inspection of street repairs during utility installation projects would bring in about $24,000 per year. Traffic and Lighting personnel estimate that about a third of this sum should go to the Streets Division to reimburse them for their work, for a net yield to Traffic and Lighting of $18,000.

Traffic and Lighting currently spends about $50,000 per year on the operation and maintenance of the Opticom signal priority system, which is used by the Police and Fire Departments. Once established as a Revenue Center, Traffic and Lighting could follow the procedures now set up for the city's internal service funds and bill the public safety departments for the costs of providing this service.

Traffic and Lighting's engineering branch spends time reviewing plans for new developments to make sure they will not cause traffic problems. They estimate that in 1984 they will conduct 100 such reviews. A modest charge of $15 per plan review by Traffic and Lighting would bring in $1,500 annually.

Traffic and Lighting expects to mark 25 detours in 1984. These detours are usually the result of construction work that requires the closing of a street or bridge. Billing the responsible party for the costs of marking the detour would bring in $5000 annually.

Table A.5 summarizes the opportunities for generating revenue from user fees and charges. Currently, Traffic and Lighting's revenues from

<table>
<thead>
<tr>
<th>Source</th>
<th>Current Yield ($)</th>
<th>Proposed Yield ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking meter receipts</td>
<td>532,000</td>
<td>532,000</td>
</tr>
<tr>
<td>Meter-hooding fees</td>
<td>30,000</td>
<td>30,000</td>
</tr>
<tr>
<td>Street use permits</td>
<td>15,750</td>
<td>18,000</td>
</tr>
<tr>
<td>Residential parking permits</td>
<td>5,000</td>
<td>7,500</td>
</tr>
<tr>
<td>Temporary No Parking signs</td>
<td>1,200</td>
<td>4,800</td>
</tr>
<tr>
<td>Curb parking control fees</td>
<td>25,000</td>
<td>25,000</td>
</tr>
<tr>
<td>Utility installation permits</td>
<td>0</td>
<td>18,000</td>
</tr>
<tr>
<td>Opticom billings</td>
<td>0</td>
<td>50,000</td>
</tr>
<tr>
<td>Site plan reviews</td>
<td>0</td>
<td>1,500</td>
</tr>
<tr>
<td>Detour-marking fees</td>
<td>0</td>
<td>5,000</td>
</tr>
<tr>
<td>Total (all sources)</td>
<td>608,950</td>
<td>691,800</td>
</tr>
</tbody>
</table>
this source amount to a little over $600,000 per year. We estimate that through a combination of new charges and fee increases, this sum could be increased by more than $80,000.

Enterprise Income

A third source of funding for the Traffic and Lighting Revenue Center could be business income. We shall discuss two general possibilities here: parking meter advertising and sale of support services.

A number of companies sell advertising space on city parking meters. Their present clients range from Hermosa Beach, California, to Saint Louis, Missouri. One firm has indicated that it would pay a city $26.40 per parking meter per year for the right to sell advertising. With 1950 meters, Saint Paul could earn $51,480 per year.

The Division could probably increase the income it earns from advertising by running the operation directly. Self-operation would allow the Revenue Center to pocket the profit margin that would otherwise go to the private firm. In addition, self-operation would open the possibility of selling advertising space on light poles, controller boxes, and other street fixtures maintained by the Division. Finally, in combination with other Traffic and Lighting services such as curb parking controls and detour marking, the advertising operation would allow the Revenue Center to offer a complete line of responsive signing services.

Running an advertising subsidiary would require acquisition of a new set of skills by Revenue Center personnel, which would take time and effort. Therefore, self-operation is probably not a step that a Revenue Center should take initially. It might be wise to bring in a private firm and spend a couple of years observing how they operate. It would also be wise to meet with the arm of the regional transit authority that sells advertising on buses. A joint venture with such organizations may be a good way to get started.

There are many potential customers for the sale of support services. Sign production, traffic engineering, and meter, signal, and light maintenance can potentially be used by almost any nearby city. Indeed, the potential market also includes nonprofit institutions such as churches and universities, as well as private organizations such as shopping centers and factories. All have parking lots that need striping; many also have lights that require maintenance. The city has already been asked by some private businesses to collect traffic counts for use in business planning. And, of course, many places need signs. Because of economies of scale, the city may be able to provide these services at competitive prices. For example, the state capitol has
approximately 250 parking meters that are currently maintained by the state. The resulting workload is not sufficient to keep one state repairman fully occupied. The city could probably provide that service at a charge that exceeds its costs but is lower than what the state is now paying. Direct maintenance costs currently run about $60 per meter for Traffic and Lighting. Taking over maintenance of the state parking meters at $65 per meter would bring in about $13,000 per year.8

Street Lighting Service Charges

The most important single new source of revenue for Traffic and Lighting is service charges for street lighting.9 Such assessments could conceivably cover the full costs of the street lighting system (activity 02283), which accounts for 40 percent of the Traffic and Lighting budget.

There are a number of arguments in favor of the use of service charges to finance street lighting. First, it relates costs more closely to benefits received than does the present system of property tax finance. The level of street lighting in Saint Paul varies dramatically from one area of the city to another. The spacing of street lights varies greatly, and the type of fixture ranges from simple bulbs on wooden poles to expensive multiglobe decorative fixtures. Thus, the use of general revenues forces people to pay similar amounts for vastly dissimilar levels of service.

Second, the use of service charges permits forms of equity protection through payment deferrals that otherwise might not be available.

Finally, the use of service charges would increase the responsiveness of service delivery by making it easier for the Division to accommodate special requests. The city has already taken an important step in this direction by installing expensive new lighting fixtures in one of its neighborhoods at the request of the residents and billing them directly for the added costs of those fixtures.

The design of a system of street lighting service charges must first define what portion of the street lighting system is "essential," providing general benefits, and what portion is "responsive." Such a proposal must also describe the costs of the system and the required yield of the service charge. It must define a unit of lighting service that is specific enough to be used to compute bills. It must provide some form of

8We frequently discuss the need for budgeting to cover full costs. When considering the expansion of an existing service, however, charges need only exceed direct costs to bring additional revenue to the city.

9This section draws heavily on the excellent work of Donald Sobania, head of Lighting Maintenance and Operations.
protection for disadvantaged property owners. And it must address the operational and administrative questions that any proposal of this magnitude inevitably raises.

Defining the “essential” component in street lighting requires a political decision. The staff of the Division of Traffic and Lighting have identified three cases in which lighting provides general benefits: at intersections, along arterial streets, and at “basic,” or lifeline, levels of residential street lighting.

It is easy to argue that lighting is provided at intersections for reasons of traffic safety that provide general benefits to the public, so intersection lighting should be covered by General Fund revenues. Traffic and Lighting staff estimate this portion of the lighting budget at 25 percent of the total.

Similarly, it can be argued that lighting levels along arterial streets are high for reasons of traffic safety, and that this cost should also be borne by the General Fund. Property owners along arterial streets could be asked to make some minimum payment to reflect the difference between their lighting level and the average level of lighting along nonarterial streets. Arterial lighting accounts for about another 10 percent of the total.

A “basic” street lighting level implies some minimum level to which everyone is entitled, which then constitutes an “essential” service. Property owners would be billed only for service over and above that level. The portion of the lighting budget devoted to the provision of essential lighting would obviously depend on how the basic level of service is defined. It probably could not even be computed until the city had much more detailed information in machine-readable form about lighting types and locations.

In the absence of such information, we assume that lighting service charges would be used to cover the full costs of the lighting system, i.e., street lighting would receive no general revenue support. This may not represent the most appropriate choice, but it provides a specific basis for illustrative calculations. Our results can easily be adjusted to reflect other decisions about what constitutes essential street lighting.

We define the full costs of the street lighting system as the sum of three components: the cost of operating the system itself, the annual cost of the capital assets used to produce lighting service, and lighting’s share of the cost of the support services provided by the Traffic and Lighting Maintenance Bureau. We assign the full costs of street lights and lighting conduit to the lighting system, as well as a share of the costs of the Division’s facility, vehicles, and major equipment. Lacking more detailed information, we compute the shares of assignable costs by taking the ratio of the number of people employed by lighting to the
the total number of people employed by lighting, signals, and traffic operations. The share of support services provided by the Maintenance Bureau is also based on the number of employees.

Using these assumptions, we compute the full cost of providing street lighting and define the lighting service charge revenue yield needed to cover that cost, as shown in Table A.6. It would be necessary to raise about $2.6 million to cover fully the cost of providing street lighting.

It is impossible to determine precisely the burden per household that this figure implies without a detailed examination of the location of each street light. We can, however, form a rough estimate by making several assumptions. First, we assume that the share of the total lighting assessment paid by commercial properties would be the same as the share they now pay of street maintenance assessments. Second, we assume that the average rental property contains four units. Finally, we assume that the average rental property pays twice as much per year in lighting assessments as the average owner-occupied property. Under these assumptions, full coverage of street lighting costs would require the average homeowner to pay $22 per year (less than $2 per month); if the city were to cover the cost of lighting intersections from General Fund revenues, the charge would drop to about $17.

To institute street lighting service charges, the city must define a unit of lighting service that is specific enough for billing purposes and

<table>
<thead>
<tr>
<th>Item</th>
<th>Total Cost ($)</th>
<th>Percent Applied</th>
<th>Lighting Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lighting Operations and Maintenance</td>
<td>1,799,000</td>
<td>100</td>
<td>1,799,000</td>
</tr>
<tr>
<td>Traffic and Lighting Maintenance Bureau</td>
<td>218,000</td>
<td>39</td>
<td>85,000</td>
</tr>
<tr>
<td>Annual capital costs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Street lights</td>
<td>513,000</td>
<td>100</td>
<td>513,000</td>
</tr>
<tr>
<td>Lighting conduit</td>
<td>162,000</td>
<td>100</td>
<td>162,000</td>
</tr>
<tr>
<td>899 Dale Street facility</td>
<td>66,000</td>
<td>39</td>
<td>25,700</td>
</tr>
<tr>
<td>Vehicles</td>
<td>87,000</td>
<td>39</td>
<td>33,900</td>
</tr>
<tr>
<td>Machinery</td>
<td>50,000</td>
<td>39</td>
<td>19,500</td>
</tr>
<tr>
<td>Total lighting cost</td>
<td></td>
<td></td>
<td>2,638,100</td>
</tr>
</tbody>
</table>

SOURCES: Tables A.2 and A.3.
realistic enough to accurately measure the level of service provided. This definition must take into account two factors: the type of fixture provided, and the number of fixtures present.

Evaluating the relative worth of different types of fixtures is the more difficult problem. Fixtures differ in both the amounts of light they provide and the amounts and types of ornamentation they contain. Although these differences are essentially qualitative, for billing purposes it is necessary to specify them in quantitative terms. In effect, each type of lighting fixture has to be rated for the number of units of service it provides. One rating scheme would be to base charges on the full annualized costs of the fixture. Thus, a particular fixture's rating would be equal to its acquisition price divided by its expected lifetime, plus its annual operation and maintenance costs. Because ornamental fixtures are more expensive than simple pole lights, such an approach would provide a way of capturing these qualitative differences. It would also make it easy to accommodate requests by neighborhoods for the installation of special types of fixtures. Initially, some adjustments might be needed to deal with older fixtures whose higher operating costs do not necessarily indicate higher levels of service.

The number of fixtures present might be dealt with by basing the service measure on the distance to the nearest fixture. Or the number of fixtures within a specified distance of the property could be counted. A third way would be to base the service measure on the spacing of fixtures. These alternative measures should be discussed thoroughly by Traffic and Lighting staff and citizen representatives. However, there are a number of arguments in favor of basing the measure of lighting service on the spacing of fixtures along the block on which the property is located.

The service ratings of all the fixtures along a particular block (excluding, perhaps, those at the intersections) would then be added, and the total would be divided by the ratio of the actual block length. Corner properties would be billed according to the average of the ratings for their two sides. This approach recognizes the fact that the benefits of a light extend beyond the boundaries of the property it sits in front of. It provides a simple way of combining the type and number of fixtures into a single service measure, and it avoids placing undue burdens on corner properties. Finally, it is computationally much simpler than many of the alternatives.

Any service charge proposal must provide some form of protection for disadvantaged property owners. For example, a basic level of lighting service could be provided from General Fund revenues; a mechanism could be devised that would allow households to choose the
amount of lighting they desire; or property owners might be allowed to defer payment of the assessment.

It is also possible to give property owners some say over how much lighting they will receive and pay for. In the recent budget crisis in Saint Paul, the city turned off many lights as an economy measure. It is relatively simple to allow property owners along a block to vote on how many lights they want to have lit. Service charges could then be reduced by the amount of the electricity cost savings. A more radical proposal would be to allow property owners to choose the number of fixtures they want. Because of the costs of removing or adding light poles, however, it would be necessary to either place restrictions on the frequency with which changes could be made or bill property owners for the costs of making them. Choice over the level of service provided would allow lower-income neighborhoods to reduce their costs if they wished to do so.

A third form of equity protection is the option of deferring payment of the service charge. The deferred payments would accumulate as a lien on the property and would be paid off at the time the property is sold. This approach could help elderly homeowners whose cash incomes are small, as well as young families struggling to make ends meet after purchasing their first home.

The use of deferred payments to ease the burden created by special assessments and other service charges has received increasing attention in recent years.\textsuperscript{10} Lakewood, Colorado, and Wichita, Kansas, both have programs for allowing low-income households to defer payment of many kinds of assessments. Michigan has given its cities the authority to permit deferrals for elderly homeowners. Several other cities also operate deferral programs, and all seem pleased with the results.

We recommend that Saint Paul charge a full market rate of interest on deferred charges and open eligibility for deferrals to everyone. Charging a market rate of interest prevents people from using deferrals as a cheap line of credit, and universal eligibility has the dual effect of dramatically reducing administrative costs and guaranteeing that no special hardship cases slip through the cracks of the program.

There is little risk associated with deferral programs. At $17 to $22 per year, deferred charges would seldom if ever accumulate to a sum that is significant relative to the money that changes hands when a property is sold.

Although further investigation would be needed before a definitive judgment could be made, it appears now that bills could be computed

on Department of Public Works computers. The Department could thus give the Ramsey County tax collector coded information for inclusion on property tax bills. Implementation of a street lighting service charge would require information from the lighting portion of the infrastructure inventory that is due to be completed by the end of 1984. Thus, it is conceivable that bills could be sent out in 1985 to recover 1984 costs.

Management and Organization

The biggest single change that the current management of the Division of Traffic and Lighting would have to face would be the assumption of responsibility for managing its own revenue. As a Revenue Center, the Division would have to learn to raise its own revenues and to control spending.

The assumption of responsibility for revenue management need not and should not be a jarring transition. The financial plan for the pilot program provides enough revenue to support current operations without immediate dramatic increases in revenue or reductions in cost. Thus the current management of the division would be able to ease into its new role.

The current organizational structure of the Division emphasizes the groups of services that it provides. This structure appears to be working well and probably need not be radically altered.

It would probably be wise to set up new “business units” to handle meter advertising and the sale of support services. The nucleus of the support services unit is already present in the 12000 accounts; setting up new units as distinct entities would clarify development responsibility and would make it less likely that they would be lost in the shuffle of day-to-day business. There is probably little need to set new units up immediately. The Division’s management may want to improve its revenue management capability before launching new money-making ventures.

The Division should expand the capabilities of the Traffic and Lighting Maintenance Bureau, turning it into an administrative support unit that can help management cope with the added complexities of Revenue Center operation. The expansion of the budget for this activity would permit the Bureau to assume this larger role. To the extent that the administrative burdens of revenue management can be concentrated there, other Division managers would be able to concentrate their efforts and attention on the problems of service delivery,

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providing for a much smoother transition to the new form of organization.

THE REVENUE CENTER BUDGET

How much can user charges reduce the General Fund support required by the Division of Traffic and Lighting? Table A.7 shows 1984 capital and operating costs for the Division. The left column is based on the proposed 1984 budget, and the right column suggests the Revenue Center operation. Wages and salaries and other operating costs are taken directly from city budget documents. Fringe-benefit and central service costs have been expanded to reflect the level of these costs for the General Fund activities. Revenue Center costs are derived in a similar way from the expanded budget, as shown in Table

Table A.7

TRAFFIC AND LIGHTING GENERAL REVENUE REQUIREMENTS
(dollars)

<table>
<thead>
<tr>
<th>Item</th>
<th>Current Operation</th>
<th>Revenue Center Operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor</td>
<td>2,008,338</td>
<td>2,063,924</td>
</tr>
<tr>
<td>Fringe benefits</td>
<td>555,240</td>
<td>570,010</td>
</tr>
<tr>
<td>Central services</td>
<td>43,081</td>
<td>44,068</td>
</tr>
<tr>
<td>Other operating costs</td>
<td>1,593,915</td>
<td>1,681,000</td>
</tr>
<tr>
<td>Net capital costs</td>
<td>1,326,230</td>
<td>1,326,230</td>
</tr>
<tr>
<td>Total cost</td>
<td>5,526,804</td>
<td>5,685,232</td>
</tr>
<tr>
<td>Own-source revenues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earmarked funds</td>
<td>542,810</td>
<td>542,810</td>
</tr>
<tr>
<td>User charges</td>
<td>608,950</td>
<td>691,800</td>
</tr>
<tr>
<td>Lighting service charges</td>
<td>0</td>
<td>2,538,781</td>
</tr>
<tr>
<td>Enterprise income</td>
<td>0</td>
<td>74,730</td>
</tr>
<tr>
<td>Total own-source revenues</td>
<td>1,151,760</td>
<td>3,848,121</td>
</tr>
<tr>
<td>General revenues</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct General Fund</td>
<td>2,157,090</td>
<td>748,025</td>
</tr>
<tr>
<td>Indirect General Fund</td>
<td>474,673</td>
<td>0</td>
</tr>
<tr>
<td>Capital improvement funds</td>
<td>1,743,281</td>
<td>988,001</td>
</tr>
<tr>
<td>Total general revenues</td>
<td>4,375,044</td>
<td>1,736,027</td>
</tr>
</tbody>
</table>
A.2. Capital project costs are equal to annual depreciation for Traffic and Lighting capital assets less the capital project funds flowing into accounts 12005-12155. That adjustment is necessary to avoid double counting. Altogether, costs for the Revenue Center operation are about $160,000 higher than those implied by the proposed 1984 budget.

The derivation of own-source revenues for the two operations is described above. Currently, the Division has a little over $1 million in own-source revenue. As a Revenue Center, it could increase this amount to almost $4 million.

Current net direct General Fund requirements are computed by subtracting the Division's own-source revenues from the appropriation called for in the proposed 1984 budget. Net indirect General Fund requirements are the fringe-benefits and central service costs that do not appear in the Division's budget. Net capital improvement funds are set equal to annual depreciation for Traffic and Lighting capital assets, on the assumption that the city would spend this amount over the long term.

The figures for the Revenue Center operation are computed somewhat differently. Net capital improvement funds are equal to annual depreciation less the portion of capital costs covered by the street lighting service charges. Net indirect General Fund requirements are equal to zero, because the Division would budget full costs. Finally, net direct General Fund requirements are computed as a residual equal to total costs less total own-source revenues less net capital improvement funds. Altogether, these changes reduce total general revenue requirements from almost $4.4 million to $1.7 million.

**BUDGETING GENERAL REVENUE REQUIREMENTS**

Although the amount of General Fund revenue needed to balance the budget of the Traffic and Lighting Revenue Center is computed as a residual, it would be unwise to budget in that way. Basing General Fund appropriations on the difference between costs and own-source revenue weakens the incentives for superior financial performance. Under such an arrangement, if the Revenue Center fails to meet its targets for own-source funding, it would simply be bailed out. If it surpasses its targets, the surplus would be taxed away. To preserve incentives, the general revenue received by Traffic and Lighting should be kept independent of the Revenue Center's financial performance. Contracting in provides one way of maintaining the necessary independence.
Operation and maintenance of the city's traffic signals is an excellent area for contracting in. Signal operation is a true public good service that does not lend itself to benefit-based finance. But by tracking statistics such as the number and duration of signal outages and the number of lamps and controllers overhauled, it is possible to monitor the level of service provided. We therefore recommend that the central administration contract in with the Revenue Center for operation and maintenance of the system.

The general revenue provided for this service would be based on the full cost of operation for the system, which is equal to the direct cost of signal operation and maintenance plus an appropriate share of the cost of running the Traffic and Lighting Maintenance Bureau. We compute that share using the procedure for street lighting, basing our estimate on the number of employees assigned to signal operations. This procedure assigns 27 percent of the Bureau's cost to signal operations and maintenance. The full cost of operating the system in 1984 are thus estimated to be $888,265.

CAPITAL REPLACEMENT

The steady-state budget for the proposed Revenue Center shown in Table A.7 includes an allowance for eventual replacement of capital assets. The city has several options to consider in deciding how to use these funds.

The first option involves turning decisionmaking regarding depreciation over to the Revenue Center. Under this option, the Revenue Center staff could use the cash flow generated by depreciation to replace assets, to purchase new assets, or to launch new ventures. This option would provide the Revenue Center with the maximum amount of discretion.

The second option would be to earmark the cash flow generated by depreciation for the eventual replacement of capital assets. This option provides the greatest assurance that the condition and quality of important capital assets will be preserved over time.

The third option would be to funnel the cash flow generated by depreciation into the capital improvement budget. This option would preserve the capital stock of the city by keeping these funds within the capital budget, but it opens the possibility that the funds could be diverted to non-Traffic and Lighting projects. This approach gives the Revenue Center the least control over the use of the funds.

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12We assume here that funds for replacement of capital assets used in providing the service will continue to be supplied through the capital improvement process.
Depreciation funds from assets such as street lights or traffic signals should probably be earmarked for their replacement. The city will always need basic infrastructure of this sort, and there is little reason to direct cash flow to other uses.

Lesser assets, such as vehicles or machinery, should be replaced at the discretion of the Revenue Center. Managers and employees both have a great deal of first-hand knowledge as well as an important stake in these decisions, and there is no need for the central administration to intrude.

Intermediate cases are harder to classify. The Dale Street Traffic and Lighting facility, for example, could probably be handled in any of the three ways. Decisions about how to handle depreciation in these cases should probably be based on the city’s long-term plans regarding these assets.

COST AND INCOME FORECASTS AND WORKING CAPITAL REQUIREMENTS

To estimate cash requirements for a Traffic and Lighting Revenue Center, we need to know how rapidly its costs will rise over time and how quickly the income sources discussed above would become available. In the following, therefore, we consider the dynamics of the Revenue Center’s finances.

Operating Costs

To project operating costs for Traffic and Lighting, we apply the cost forecasting methodology developed in Phase I of the Rand-Saint Paul project to the expanded budget.13 We consider operations over a ten-year period starting in 1984. Inflation for the period 1984–1986 is assumed to be 5 percent in 1984, gradually decreasing to 3.7 percent by 1988. For the period 1989–1993, we assume that inflation will proceed at an annual rate of 4 percent. Central service costs are assumed to remain constant (in real terms) throughout the period.

Although the Phase I work did not deal with capital costs in quite the way followed here, the models developed there can be used to project Traffic and Lighting capital costs. Annual depreciation charges for street lights, conduit, traffic signals, and the Division facility are projected using the Phase I construction cost model. Depreciation for vehicles and equipment is projected using the miscellaneous machinery cost model. To estimate net capital costs, we assume that the volume

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13Fernandez, Neela, Caggiano, Pascal, and Hillestad, op. cit.
of capital project work performed directly by Traffic and Lighting personnel remains constant in real terms throughout the period.\textsuperscript{14}

Table A.8 presents our cost projections for the Traffic and Lighting Revenue Center. Operating costs include the project work performed by Traffic and Lighting personnel that appears in accounts 12005–7 and 12155. Capital costs are equal to annual depreciation charges for Traffic and Lighting capital assets less project work included in operating costs.

Operating costs are projected to rise from $4,360,000 in 1984 to $7,108,000 in 1993. This increase implies an annual growth rate of about 6 percent—greater than the projected rate of inflation. The rapid rise in operating costs is attributable to the labor and electricity components in the Traffic and Lighting budget. Costs of both are pro-

Table A.8
CAPITAL AND OPERATING COSTS FOR THE TRAFFIC AND LIGHTING REVENUE CENTER, 1984–1993 (thousands of dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Operating Costs*</th>
<th>Net Capital Costs\textsuperscript{a}</th>
<th>Total Costs\textsuperscript{b}</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>4,360</td>
<td>1,325</td>
<td>5,685</td>
</tr>
<tr>
<td>1985</td>
<td>4,522</td>
<td>1,404</td>
<td>5,927</td>
</tr>
<tr>
<td>1986</td>
<td>4,786</td>
<td>1,479</td>
<td>6,266</td>
</tr>
<tr>
<td>1987</td>
<td>5,059</td>
<td>1,554</td>
<td>6,614</td>
</tr>
<tr>
<td>1988</td>
<td>5,342</td>
<td>1,629</td>
<td>6,971</td>
</tr>
<tr>
<td>1989</td>
<td>5,653</td>
<td>1,714</td>
<td>7,368</td>
</tr>
<tr>
<td>1990</td>
<td>5,984</td>
<td>1,803</td>
<td>7,787</td>
</tr>
<tr>
<td>1991</td>
<td>6,336</td>
<td>1,897</td>
<td>8,233</td>
</tr>
<tr>
<td>1992</td>
<td>6,710</td>
<td>1,996</td>
<td>8,705</td>
</tr>
<tr>
<td>1993</td>
<td>7,108</td>
<td>2,100</td>
<td>9,207</td>
</tr>
</tbody>
</table>

\textsuperscript{a}Includes capital project work performed by Traffic and Lighting personnel.

\textsuperscript{b}Annual depreciation charges for Traffic and Lighting capital assets less capital project work included in operating costs.

\textsuperscript{14}We assume that the funds available to the Revenue Center for project work grow at the same rate as consumer prices in general, even though construction costs are projected to rise somewhat more rapidly.
jected to rise more rapidly than prices in general, particularly the cost of electricity, which is projected to grow by 8.5 percent per year.\textsuperscript{16}

Net capital costs are projected to grow from $1,325,000 in 1984 to $2,100,000 in 1993, for an annual growth rate of about 5.5 percent—still somewhat higher than the rate of inflation, but lower than the rate of increase projected for operating costs.

Total costs for the Traffic and Lighting Revenue Center are projected to rise from $5,685,000 in 1984 to $9,207,000 in 1993.

**Own-Source Revenue**

To project own-source income for the Revenue Center, we have made a number of assumptions about growth rates and timing.

To forecast revenues from earmarked funds, we assumed that yields would remain constant in real terms. We assumed that user charge revenues and revenues from parking meter advertising would grow in real terms by 3 percent per year. We expect that the bulk of this increase will come not from fee increases in excess of the rate of inflation, but rather from aggressive efforts by the Revenue Center to market services. Revenues will increase because growing productivity and better marketing will enable the Center to provide more and better services to the public.

After several years of experience with parking meter advertising, the Revenue Center could take over the operation from the private company that now stands ready to pay the city for use of the meters. It could then consider selling space on other street furniture such as light poles or controller boxes. This would lead to an abrupt shift in the trend of meter advertising revenues. Rather than predict precisely when such a change could take place, we have instead chosen to approximate the probable irregular pattern with smooth growth in revenue.

We assume that income from the sale of support services would also grow in real terms by 3 percent annually. Realizing the potential in this area will take some time, however. Extensive negotiations will have to be carried out with neighboring municipalities, other units of government, nonprofit institutions, and private businesses. To estimate the rate of market penetration by the Revenue Center, we assumed that the fraction of potential income that is actually realized would grow steadily, from 0 percent in 1984 to 100 percent in 1989.

A number of factors must be taken into account in projecting revenues from street lighting service charges, including the future trend in

\textsuperscript{16}Fernandez, Neels, Caggiano, Pascal, and Hillestad, op. cit.
the costs that determine assessment levels, the normal lag between expenditure and receipt of service charges revenue, and the effects of the deferral program.

The estimates of future street lighting costs were prepared by applying the Phase I cost forecasting methodology to Lighting Operations and Maintenance and the Traffic and Lighting Maintenance Bureau. Annual depreciation charges for street lighting were projected using the forecast for construction costs.

We assumed that, in accordance with city budget policy, service charges would be required to cover not only the cost of financing the cash deficit generated by the lag between expenditures and receipt of revenue, but also the costs of service provision.

We assumed that to minimize cash-flow problems an effort would be made to bring street lighting service charges on line as quickly as possible. Analysts in the city's budget office indicate that revenues can be obtained most rapidly by closing the lighting operation's books in October and computing "charges receivable" in time to have them placed on the next year's property tax bill. On this schedule, Traffic and Lighting would receive the first installment of service charge revenue in 1985, covering about three-fourths of 1984 street lighting costs. The revenue received in 1986 would cover the remaining 1984 costs plus about three-fourths of 1985 costs. That same lag between expenditure and receipt of revenues would persist in subsequent years.

Because a deferral program like the one proposed here has never been tried, there is no evidence to indicate how many people are likely to take advantage of it. We have made some assumptions about the response to the program, but they are based more on speculation than analysis and may have to be modified to reflect actual experience.

We assume that 15 percent of the homeowners in Saint Paul would decide to defer payment of street lighting service charges, reflecting widespread use of the deferral option by elderly homeowners and minor use by other groups.

We assume also that the probability that a particular deferral will be repaid is an increasing function of the length of time that has elapsed since the payment was originally due. Table A.9 shows the probabilities that were used. It was assumed that relatively few people who elect to defer payment would settle their bills the following year. By 10 years, however, a large majority of outstanding bills should be settled, if for no other reason than that most housing units will have been sold to new owners.
Table A.9

PROBABILITY OF REPAYING A DEFERRED
SERVICE CHARGE AS A FUNCTION OF
THE LENGTH OF DEFERRAL

<table>
<thead>
<tr>
<th>Years Elapsed Since Deferral of Payment</th>
<th>Probability of Payment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.05</td>
</tr>
<tr>
<td>2</td>
<td>.10</td>
</tr>
<tr>
<td>3</td>
<td>.15</td>
</tr>
<tr>
<td>4</td>
<td>.20</td>
</tr>
<tr>
<td>5</td>
<td>.30</td>
</tr>
<tr>
<td>6</td>
<td>.40</td>
</tr>
<tr>
<td>7</td>
<td>.50</td>
</tr>
<tr>
<td>8</td>
<td>.60</td>
</tr>
<tr>
<td>9+</td>
<td>.70</td>
</tr>
</tbody>
</table>

The interest rate on deferrals must be set high enough to discourage their frivolous use. It should be comparable to the rates households must pay on other loans. We use a rate of 12 percent, which is roughly comparable to interest on new mortgages in 1983.

Cash-Flow and Borrowing Forecasts

Table A.10 presents the revenue forecasts that result from this set of assumptions. Source revenues are projected to grow from $1,286,000 to $6,889,000 between 1984 and 1993. The big jump comes in 1985, when revenues from street lighting service charges would first become available.

Table A.11 projects general revenues that would be supplied to Traffic and Lighting under the assumptions outlined above. Over the ten-year period, general revenue requirements are projected to rise from $1,876,000 to $3,088,000.

Table A.12 shows projected expenses and revenues and the resulting positive or negative cash flow from operations. Initially, the Revenue Center would run a large deficit, because of the lags inherent in service charge financing. By 1986, however, the combination of own-source and general revenue would more than cover expenses. By 1989 the surplus of revenues over costs would reach almost $900,000. From then on it would decline slowly, to about $800,000 by the end of the period.
Table A.10
OWN-SOURCE REVENUE FOR THE TRAFFIC AND LIGHTING REVENUE CENTER, 1984-1991
(Thousands of dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Earmarked Funds</th>
<th>User Charges</th>
<th>Lighting Assessments</th>
<th>Business Income</th>
<th>Total Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>543</td>
<td>692</td>
<td>0</td>
<td>51</td>
<td>1,296</td>
</tr>
<tr>
<td>1985</td>
<td>570</td>
<td>748</td>
<td>1,764</td>
<td>61</td>
<td>3,143</td>
</tr>
<tr>
<td>1986</td>
<td>596</td>
<td>806</td>
<td>3,165</td>
<td>71</td>
<td>4,639</td>
</tr>
<tr>
<td>1987</td>
<td>621</td>
<td>864</td>
<td>3,658</td>
<td>82</td>
<td>5,224</td>
</tr>
<tr>
<td>1988</td>
<td>645</td>
<td>925</td>
<td>3,887</td>
<td>94</td>
<td>5,551</td>
</tr>
<tr>
<td>1989</td>
<td>669</td>
<td>988</td>
<td>4,024</td>
<td>107</td>
<td>5,787</td>
</tr>
<tr>
<td>1990</td>
<td>695</td>
<td>1,058</td>
<td>4,157</td>
<td>114</td>
<td>6,025</td>
</tr>
<tr>
<td>1991</td>
<td>723</td>
<td>1,134</td>
<td>4,311</td>
<td>122</td>
<td>6,290</td>
</tr>
<tr>
<td>1992</td>
<td>752</td>
<td>1,214</td>
<td>4,476</td>
<td>131</td>
<td>6,573</td>
</tr>
<tr>
<td>1993</td>
<td>782</td>
<td>1,301</td>
<td>4,666</td>
<td>141</td>
<td>6,889</td>
</tr>
</tbody>
</table>

*Figures may not add exactly to totals, due to rounding.

Table A.11
GENERAL REVENUES FOR TRAFFIC AND LIGHTING, BY YEAR
(Thousands of dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Traffic Signal Contract</th>
<th>Capital Improvement</th>
<th>Total General Revenues*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>888</td>
<td>988</td>
<td>1,876</td>
</tr>
<tr>
<td>1985</td>
<td>944</td>
<td>1,042</td>
<td>1,986</td>
</tr>
<tr>
<td>1986</td>
<td>998</td>
<td>1,100</td>
<td>2,099</td>
</tr>
<tr>
<td>1987</td>
<td>1,056</td>
<td>1,160</td>
<td>2,216</td>
</tr>
<tr>
<td>1988</td>
<td>1,116</td>
<td>1,224</td>
<td>2,340</td>
</tr>
<tr>
<td>1989</td>
<td>1,181</td>
<td>1,291</td>
<td>2,473</td>
</tr>
<tr>
<td>1990</td>
<td>1,251</td>
<td>1,362</td>
<td>2,613</td>
</tr>
<tr>
<td>1991</td>
<td>1,325</td>
<td>1,437</td>
<td>2,763</td>
</tr>
<tr>
<td>1992</td>
<td>1,404</td>
<td>1,516</td>
<td>2,921</td>
</tr>
<tr>
<td>1993</td>
<td>1,488</td>
<td>1,600</td>
<td>3,088</td>
</tr>
</tbody>
</table>

*Figures may not add exactly to totals, due to rounding.
Table A.12
EXPENSES, REVENUES, AND NET CASH FLOW FROM TRAFFIC AND LIGHTING OPERATIONS, BY YEAR
(thousands of dollars)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Expenses</th>
<th>Own-Source Revenue</th>
<th>Total General Revenues</th>
<th>Net Cash Flow from Operations*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>5,885</td>
<td>1,286</td>
<td>1,876</td>
<td>2,523</td>
</tr>
<tr>
<td>1985</td>
<td>5,927</td>
<td>3,143</td>
<td>1,866</td>
<td>798</td>
</tr>
<tr>
<td>1986</td>
<td>6,246</td>
<td>4,639</td>
<td>2,099</td>
<td>471</td>
</tr>
<tr>
<td>1987</td>
<td>6,614</td>
<td>5,229</td>
<td>2,216</td>
<td>827</td>
</tr>
<tr>
<td>1988</td>
<td>6,971</td>
<td>5,551</td>
<td>2,340</td>
<td>920</td>
</tr>
<tr>
<td>1989</td>
<td>7,367</td>
<td>5,787</td>
<td>2,473</td>
<td>883</td>
</tr>
<tr>
<td>1990</td>
<td>7,757</td>
<td>6,025</td>
<td>2,613</td>
<td>852</td>
</tr>
<tr>
<td>1991</td>
<td>8,233</td>
<td>6,290</td>
<td>2,763</td>
<td>829</td>
</tr>
<tr>
<td>1992</td>
<td>8,705</td>
<td>6,573</td>
<td>2,921</td>
<td>786</td>
</tr>
<tr>
<td>1993</td>
<td>9,207</td>
<td>6,899</td>
<td>3,088</td>
<td>770</td>
</tr>
</tbody>
</table>

*Figures may not add exactly to totals, due to rounding.

Borrowing Needs

The Revenue Center would have to borrow enough in any given year to enable it to pay all its bills and meet its needs for working capital. Table A.8 established the level of Revenue Center expenditures. To establish working capital needs, we adopted the guidelines from the city’s statement of budget goals and policies, which recommends that enterprise funds whose revenue streams are highly uncertain should strive to maintain reserves of working capital equal to two months’ expenditures. For the Traffic and Lighting Revenue Center, working capital reserves should be equal to two months’ expected receipts from earmarked funds, user charges, and business income.

We assume that the Revenue Center would pay 8 percent in interest on its outstanding loan balance each year and would retire 20 percent of the total principal. The 8 percent figure corresponds to the city’s current borrowing costs; the 20 percent is roughly comparable to a 5 percent amortization period for Revenue Center loans. The assumption that 20 percent of outstanding principal is retired in any year simplifies the calculations without altering their essential message.

A large majority of the Revenue Center borrowing would be necessitated by the cash-flow requirements associated with street lighting service charges. Therefore, 90 percent of the Revenue Center's interest and debt retirement payments in a given year would become part of costs recovered in the following year's lighting charges.

Table A.13 shows projected debt transactions required for operation of the Revenue Center. To cover cash shortfalls, the Revenue Center would have to borrow for its first three years of operation. It appears that in 1987, total revenues will be sufficient for repayment of the accumulated loans to begin. Total outstanding debt would rise to a peak of $5 million in 1986. By the end of the period, repayments would have reduced total debt to $1.9 million.

First-year total funding requirements for the Traffic and Lighting Revenue Center—including both appropriations of general revenue and loans—would be $342,000 above the amount currently budgeted for the Division's 1984 operations. The difference arises largely because of the need to build up working capital reserves. After that first year, however, funding requirements would decline sharply. Over the long term, the burden to the General Fund of supporting the Traffic and Lighting Division would be markedly reduced.

<table>
<thead>
<tr>
<th>Year</th>
<th>Net Borrowing</th>
<th>Interest Costs</th>
<th>Total Loans Outstanding*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>2,541</td>
<td>0</td>
<td>2,541</td>
</tr>
<tr>
<td>1985</td>
<td>1,348</td>
<td>227</td>
<td>4,189</td>
</tr>
<tr>
<td>1986</td>
<td>127</td>
<td>335</td>
<td>4,316</td>
</tr>
<tr>
<td>1987</td>
<td>-370</td>
<td>345</td>
<td>3,946</td>
</tr>
<tr>
<td>1988</td>
<td>-536</td>
<td>316</td>
<td>3,410</td>
</tr>
<tr>
<td>1989</td>
<td>-566</td>
<td>273</td>
<td>2,844</td>
</tr>
<tr>
<td>1990</td>
<td>-569</td>
<td>228</td>
<td>2,275</td>
</tr>
<tr>
<td>1991</td>
<td>-455</td>
<td>182</td>
<td>1,820</td>
</tr>
<tr>
<td>1992</td>
<td>-364</td>
<td>146</td>
<td>1,456</td>
</tr>
<tr>
<td>1993</td>
<td>-291</td>
<td>116</td>
<td>1,165</td>
</tr>
</tbody>
</table>

*Figures may not add exactly to totals, due to rounding.

17 Among currently budgeted costs, we include here the long-run capital replacement costs for Traffic and Lighting assets.
ACTION PLAN FOR THE TRAFFIC OPERATIONS REVENUE CENTER

The steps in the action plan devised to set up the Traffic Operations Revenue Center, the initial version of the Traffic and Lighting Revenue Center, are listed below:

1. Develop a capital asset inventory.
2. Estimate annual depreciation for capital assets.
3. Estimate fringe-benefit costs.
4. Estimate central service overhead costs.
5. Estimate full-cost rental payments for 899 Dale Street (the Division's present facility).
6. Assemble a full-cost budget for traffic operations.
8. Estimate Traffic Operations' share of parking meter revenue.
9. Identify current user charge revenues.
10. Develop an inventory of current services.
11. Review current services to measure private components.
12. Estimate service provision costs.
13. Identify potential new user charges.
14. Estimate General Fund requirements.
15. Estimate working capital needs.
16. Develop a first-year Revenue Center budget.
17. Submit the draft budget for review and comment by the Budget Director.
18. Assemble a Revenue Center balance sheet.
19. Submit the balance sheet for review and comment by the Department of Finance and Management Services.
20. Establish goals for revenue growth.
21. Draft a Revenue Center charter.
22. Submit the charter for review and comment by the Director of Finance and Management Services.
23. Submit the charter for review and comment by the Budget Director.
24. Submit the charter for review and comment by the City Council.
25. Finalize the Revenue Center charter.
1. Develop a capital asset inventory

Traffic and Lighting personnel should develop a detailed inventory of the capital assets that will be used by the new Revenue Center. Under the current plan, the Revenue Center will be limited to Traffic Operations, so the inventory should be limited to the assets used by that part of the Division. This inventory should contain all major capital assets along with their current values.

In establishing values, the Division should try to estimate what the assets would sell for, recognizing that in some cases (fixed investments like lighting conduit, for example), “sales value” may be a somewhat artificial concept. In valuing assets, the Division should draw on the technical resources available within the city government. The Divisions of Assessments and Valuations and Purchasing in the Department of Finance and Management Services and the Division of Engineering in the Department of Public Works can probably provide a great deal of help in establishing reasonable values for Revenue Center assets.

2. Estimate annual depreciation for capital assets

For all of the assets in the inventory that are depreciable in the sense that their replacement involves large and widely spaced expenditures, the Division should estimate remaining useful lifetimes. Here, once again, the Division should draw on the technical resources available within the city government. The Divisions of Engineering and Assessments and Valuations can probably provide the most help.

Dividing current value by remaining useful lifetime for each depreciable asset provides an estimate of the annual capital costs associated with that asset. The Revenue Center will need to know what those costs are in order to set beneficiary charge levels and determine General Fund requirements.

3. Estimate fringe-benefit costs

The Division should compute the fringe benefit costs for the Traffic Operations employee positions now carried in the General Fund. Procedures for estimating fringe benefit costs are spelled out on page 28 of the proposed 1984 statement of budget goals and policies.

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18To establish the inventory, the Division can begin with the assets listed in Table A.6. That list must be expanded to include more detail regarding vehicles and machinery and inventories of supplies and materials.
4. Estimate central service overhead costs

The Division should estimate what the central service overhead charges for the new Revenue Center will eventually be.\(^{19}\)

5. Estimate full-cost rental payments for 899 Dale Street

If the budget for the new Revenue Center is to reflect full costs, it should include a rental payment for the use of the 899 Dale Street facility. Determining what that payment should be involves two steps. The Division should first compute the full costs of operation of the facility. It should then assign a portion of the cost to Traffic Operations on the basis of how much of the space there Traffic Operations uses. The full cost of operation for the Dale Street facility includes the following components:

- Depreciation for the building
- Maintenance and repair costs
- Utility costs
- Janitorial costs
- Management costs

The share of costs to be assigned to Traffic Operations can be computed by determining how much space it occupies relative to the other branches of Traffic and Lighting. Some adjustments can be made if Traffic Operations uses rooms or other spaces that generate above-average costs.

If the Traffic and Lighting Maintenance Bureau continues to be part of the General Fund, rental payments by the Revenue Center would probably have to be turned over to the General Fund. Eventually, the Division may want to set the Bureau up as an Internal Service Fund, in which case the rental payments could be used to build up a reserve fund for the upkeep of the facility.

6. Assemble a full-cost budget for Traffic Operations

The Division should combine the General Fund budget for Traffic Operations with the cost components estimated in steps 2 through 5 to develop a full cost budget. (The form of that budget should follow the model presented earlier in this appendix.)

\(^{19}\)See p. 71 for an example of such a calculation. The procedures described there could be applied to Traffic Operations. The Division may wish, however, to refine those estimates with the help of Budget Office staff.
7. Estimate Traffic Operations' share of state aid funds

The Division should decide what fraction of the state aid funds it receives belong to Traffic Operations. In doing so, it should recognize that there is probably no precise and objective way of apportioning these funds. What is therefore needed is a reasonable rule of thumb rather than a precise engineering measurement. The most obvious and reasonable method is probably to divide the funds up in proportion to costs.

The Division should determine what fractions of the budgets of each of its four major branches (Traffic Operations, Traffic Engineering, Signals, and Lighting) represent activities of the types that state aid was intended to support. For signals, this fraction would probably be 100 percent. For lighting, it might be whatever fraction of the budget supports lighting provided for reasons of traffic safety. For these calculations, the Division could probably use the branches' current General Fund budgets, since the distortions resulting from failure to include full costs would probably be similar for all. Traffic Operations' share of state aid could then be based upon its share of the total budget for these activities.

8. Estimate Traffic Operations' share of parking meter revenues

Three activities have a direct claim on parking meter revenues: enforcement (carried out by the Police Department), collection (carried out by the Finance Department), and maintenance (carried out by Traffic Operations). In principle, the problem of how to divide these revenues among the three activities is not different from the problem of apportioning state aid. In practice, however, it is more complicated.

The city has already decided to set aside a portion of parking meter receipts for the parking and transit fund. The Division should therefore concentrate on that portion of parking meter receipts that now goes into the General Fund.

In cooperation with the Police Department and Budget Office staff, the Division should try to estimate how much is now being spent on parking meter enforcement. Because these costs are not split out in the budget, it would be necessary to estimate the amount of time spent on enforcement; to convert that time to dollars, using wage and fringe-benefit rates; and then to use nonlabor and overhead factors to convert labor costs into full budgeted costs. The Division should then estimate the revenue that the city is now taking in from parking fines. This calculation would require the cooperation of the Finance Department.
If, as is the case in many cities, revenues from parking fines exceed enforcement costs, it would then be possible to argue that no enforcement costs would have to be covered by meter revenues. If enforcement costs exceed revenues from parking fines, the excess costs would have to come from meter revenues, leaving a residual to be apportioned between the maintenance and collection functions.

Division of the remaining parking meter revenues between the collection and maintenance functions should once again be based on costs. Because neither set of costs appears directly in the city’s budget documents, it would be necessary in both cases to build them up from estimates of direct time and material costs.

What should emerge from these calculations is an estimate of the fraction of parking meter revenues that can be legitimately be considered to represent user charge income for Traffic Operations.

9. Identify current user charge revenues

The Division should develop an inventory of the user charges now in place for Traffic Operations and determine what their current yields are. (The list in Table A.5 could serve as a starting point; it should be reviewed for logic and completeness.)

10. Develop an inventory of current services

The Division should develop a comprehensive inventory of the services provided by Traffic Operations. We recommend strongly that the Division take a “top down” approach. It is better to have a highly aggregated but complete inventory than one that is detailed but contains major holes.

11. Review current services to measure private components

The Division should review the services currently provided by Traffic Operations to measure their public and private components. (The checklist presented in Section II would be useful here.) It is reasonable to expect a certain amount of iteration between steps 10 and 11. Division staff might decide after trying to apply the checklist procedures, for example, that one or more of the services defined in step 10 is too aggregate to work with and that the level of detail contained in the service inventory must be expanded.
12. Estimate service provision costs

The Division should apportion the full costs of operation as computed in Step 6 among the services listed in Step 10 to determine how much each costs to provide.

13. Identify potential new user charges

The Division can compute an estimate of how much user charge income each of the services in the inventory should generate, by multiplying the cost of provision times the share of the benefits judged to be private (computed in Step 11). Comparing this figure with current receipts will enable the Division to identify promising areas for the imposition of new fees and charges. These areas should be reviewed carefully, with an eye toward developing within them new sources of user charge income.

14. Estimate General Fund requirements

The Division should estimate how much General Fund support the new Revenue Center will need. That sum will be equal to its full costs of operation less own-source revenues. For Traffic Operations, own-source revenues will include a share of state aid, a share of parking meter receipts, and current user charge income, plus the income generated by any new fees or charges proposed as a result of the review conducted in Step 13.

15. Estimate working capital needs

The Division should estimate what reserves of working capital it will need to bridge the gap between expenditures and receipt of revenues and to provide a reasonable reserve against unforeseen contingencies. Because the Division has had very little experience in this area, it should work closely with Budget Office staff in carrying out this step.

16. Develop a first-year Revenue Center budget

The Division should combine its estimates of costs and revenues into a proposal for the first-year Revenue Center budget. In developing this proposal, the Division should solicit advice from current enterprise fund managers both within the Department of Public Works and from others parts of city government. Division staff should make special efforts to stay in close touch with the team working on the Parks and Recreation Revenue Center proposal.
The budget should specify both projected expenditures and sources of revenues. It should identify how much the Revenue Center will have to borrow in order to establish initial reserves of working capital.

17. Submit the draft budget for review and comment by the Budget Director

The proposed Revenue Center budget should be submitted for review by the Budget Director, who will examine the plausibility of its financial assumptions and evaluate its likely impacts on other portions of the city budget.

18. Assemble a Revenue Center balance sheet

In cooperation with the Division of Accounting in the Department of Finance and Management Services, Division staff should put together a preliminary version of the Revenue Center balance sheet. The assets carried on the balance sheet will consist of the physical assets listed in the capital asset inventory plus any initial reserves of working capital. Liabilities will consist of the Revenue Center's promise to repay any funds borrowed in order to establish working capital reserves.

19. Submit the balance sheet for review and comment by the Director of Finance and Management Services

The balance sheet should be reviewed by the Finance Director for accuracy and for its impacts on other aspects of the city's accounting system. He should work with Traffic and Lighting Division staff to determine how to obtain any advances of working capital that are needed and to establish a schedule for repayment of whatever loans this might require. If necessary, he should make sure that the budget for the Revenue Center is revised to incorporate any debt-service payments those loans might generate.

20. Establish goals for revenue growth

The Division should establish goals for the growth of own-source revenues over the first three years of Revenue Center operation. This growth in revenue is likely to result from a combination of better management of the city's parking meters, sales of advertising space on those meters, and perhaps sales of new responsive services. Since operation as a Revenue Center represents a major break with the
Division’s past practices, it is probably wise to set modest goals initially. Subject to what is attainable, however, those goals should represent some real growth in income and constitute something of a challenge to the management and staff of the new Revenue Center.

21. Draft a Revenue Center charter

The Division should prepare a draft version of the charter for the new Revenue Center. That draft should contain the following elements:

- A statement of Revenue Center service responsibilities
- A statement of the Revenue Center’s initial assets and liabilities
- A first-year budget for the Revenue Center, including both projected spending and expected sources of revenue
- A description of proposed new user charges and fee increases
- A statement of goals for own-source revenue growth, along with a brief description of plans for meeting those goals
- A plan for dividing Revenue Center surpluses among the General Fund, workers, and Revenue Center retained earnings
- A date at which the success of the Revenue Center will be evaluated (probably at the end of year three)

22. Submit the charter for review and comment by the Director of Finance and Management Services

23. Submit the charter for review and comment by the Budget Director

24. Submit the charter for review and comment by City Council

25. Finalize the Revenue Center Charter

Appendix B

MUNICIPAL ATHLETIC FACILITY
REVENUE CENTER

In this appendix, we apply the general principles outlined in the report to show how Saint Paul’s Municipal Athletic Facility could become a Revenue Center. The Parks and Recreation Division has shown great initiative in employing beneficiary charges and enterprise funds. Accordingly, the plan for the Municipal Athletic Facility Revenue Center (MAFRC) includes some ambitious revenue-raising proposals.

The 3,100-seat, open-air municipal stadium is located in Energy Park. Built by funds that came primarily from the Port Authority in a swap for the land under old Midway Stadium, it opened for business in 1982. From April through October, the city rents the stadium for baseball, football, and other sports and entertainment events which require an open surface and a large seating capacity.

Some of the services the facility provides are already supported by benefit-based financing. Charges to users of the stadium, admissions, and sales by concessionaires during events pay for about 30 percent of the facility’s direct costs but only one-sixth of its full costs. General Fund revenues cover the remainder. Unlike the Division of Traffic and Lighting, the Municipal Athletic Facility offers no services that are considered essential to the fundamental operations of the city, i.e., none that are pure public goods. However, the City Council has deemed that some of them are important enough to the community to deserve support from the General Fund, which qualifies them as merit goods.

The centerpiece of the MAFRC would be a new revenue venture—a large, inflatable, fabric bubble constructed over the stadium’s softball diamond. This would turn the Revenue Center into a year-round sports and entertainment complex which, within five years, could generate enough revenue to make the MAFRC completely self-sufficient.\(^1\) The income from this revenue venture could wean the MAFRC from General Fund support, and could even produce a surplus.

\(^1\)These conclusions are drawn from the best estimates of revenues and expenditures derivable from current information. They are not the results of a thorough marketing and feasibility study.
In the following, we use the budget as a tool to recast the municipal stadium as the MAFRC. First, we discuss the stadium's expenditures and show how they would increase with full-cost accounting under operation as a Revenue Center. (MAFRC revenues would grow as well when charges and business income appear in the accounts of the Revenue Center.) We also show how "contracting in" would regulate the General Fund contribution to the MAFRC budget in exchange for the merit services the MAFRC would offer to residents of Saint Paul. Then we analyze the costs and benefits of the MAFRC's new revenue venture and project its budgetary requirements. An illustrative ten-year steady-state budget for the new Revenue Center is developed, and the management of the MAFRC is discussed. The appendix concludes with an action plan for establishing the MAFRC.

FULL-COST ACCOUNTING OF MAFRC EXPENDITURES

The current municipal stadium budget does not accurately reflect the full costs of its operation. In 1984, the facility will directly spend about $130,000. However, many of its costs now appear in other parts of the Saint Paul Budget. Adding these indirect costs and the depreciation costs for the stadium to the direct costs would increase total expenditures to almost $235,000. If the stadium was converted to a Revenue Center, it would have to start to pay for the support and overhead services it now receives free of charge. All of these items would be transferred to the accounts of the MAFRC.

To prepare a Revenue Center steady-state budget, we must forecast each of the Municipal Athletic Facility's expenditures. Using the methodology developed in Phase I of the Rand-Saint Paul project, we divided the 1984 budgeted direct expenditures into categories and projected them individually through 1993. Using guidelines proposed by the city, we projected fringe benefits to remain at 28.4 percent of employee salaries. We estimated costs of support services by comparing the size of the total budget for a given overhead function and all of

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2City of Saint Paul, Proposed 1984 Budget: General Funds and Debt Service Funds, activity account 03192.
3See Fernandez, Neels, Caggiano, Pascal, and Hillestad, op. cit. These forecasts assume that the athletic facility provides exactly the same bundle of services that it is providing in the 1984 budget. They also assume that there is no change in how the city currently produces services and thus that in each of the next ten years the city uses exactly the package of labor, materials, utilities, etc., that it is purchasing in 1984. Inflation for 1989 through 1993 is assumed to be a steady 4.0 percent annually.
5Our estimate of expenditures for fringe benefits err on the high side because the Municipal Athletic Facility's part-time and temporary employees receive benefits at a lower rate.
the activity budgets that use those same support services. Our resulting estimate of stadium overhead costs is 6 percent of operating expenditures. This includes central service costs and department overhead, based on 1983 budgeted expenditures for the Division of Parks and Recreation. Table B.1 displays these forecasts.

Table B.1 also includes a depreciation charge which recognizes the long-term cost of replacing the stadium. A complete picture of the costs of providing the stadium must take into account the annual replacement needs generated by its use. Over time, the equivalent of the replacement cost of the stadium would appear in the capital improvement budget. We divided the current value of the stadium, $3,785,400 in 1984, by the estimated 50 years of use remaining. Current value for the stadium in future years was determined using the construction inflation index created in Phase I. The “Total Capital” line in Table B.1 shows this inflated annual cost. This amount is a real expenditure that the MAFRC should set aside each year in a special account to fund its replacement requirements.

MAFRC REVENUES

Currently, the Municipal Athletic Facility receives all its money from the General Fund, even though the stadium produces income through the user fees it charges. In essence, the stadium’s fee revenues are deposited in the General Fund and then returned to the facility as a part of its General Fund appropriation. General Funds from property taxes and the like necessarily make up any stadium deficit not covered by own-source revenues.

To create more powerful incentives to be responsive to client demands and to develop new sources of income, all the Municipal Athletic Facility’s current fee revenues (and any new ones) would be credited directly to the MAFRC’s accounts. Table B.2 shows where the revenue to finance the MAFRC might come from if General Fund contributions continued to cover the residual (i.e., total expenses minus fee revenues).

Data for estimating the MAFRC’s 1984 fee revenue come from the Municipal Athletic Facility budget and include all the income expected from facility rentals, parking fees, and concessions. We project them to grow in such a way as to keep pace exactly with inflation.

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6See the action plan at the end of this appendix and Fernandez, Neels, Caggiano, Pascal, and Hillestad, op. cit., for the details of the procedure.
7The fees for renting the lights for night games now equal the full cost of the electricity that fuels them. In 1984 this amounted to 25 percent of the budgeted electricity expenditures; for each year, then, revenues from fees for lighting the stadium remain fixed at 25 percent of the projected electricity expenditures. Electricity expenditure were projected as a component of the utility expenditures listed in Table B.1.
### Table B.1

**MAFRC EXPENDITURES FOR CURRENT MUNICIPAL ATHLETIC FACILITY PROGRAMS**

(Thousands of dollars)

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<td>20.7</td>
<td>21.7</td>
<td>22.7</td>
<td>23.9</td>
<td>25.1</td>
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<td>11.2</td>
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<td>307.4</td>
<td>324.4</td>
<td>342.6</td>
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**NOTE:** Concessions purchased for resale ($15,000 in 1984) are netted out. Entries may not sum to totals, due to rounding.

† Includes sewer charges, electricity, gas, and water.
† Includes construction, transportation, miscellaneous machinery, other supplies, hired labor, and other services.

### Table B.2

**MAFRC REVENUES RESULTING FROM CURRENT MUNICIPAL ATHLETIC FACILITY FEES**

(Thousands of dollars)

<table>
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<td>93.1</td>
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<td>Overhead</td>
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In lieu of additional fee revenues or charges, direct General Fund contributions for the MAFRC must equal the Revenue Center's operating expenditures (indicated in Table B.1) less the revenues the facility generates on its own (estimated in the top panel of Table B.2). The indirect General Fund revenues cover the expenditures for fringe benefits and overhead shown in Table B.1.

Capital improvement revenues equal the estimated annual depreciation expenditures indicated in Table B.1. They can be thought of as an accumulation of revenues that the Revenue Center would be able to tap in the future to cover the cost of replacing the stadium when it "wears out." This amount need not sit idle until the year 2034. The MAFRC could borrow from these replacement reserves to help fund new revenue ventures, or it could invest the funds in other ways.

The analysis in Table B.2 indicates that if revenues over the next ten years only keep pace with inflation, the funding pattern for the Athletic Facility will change very little. Charges to users of the facility now offset only about 16 percent of full costs. By 1993, five of every six dollars for the MAFRC would still need to come from General Fund revenues. We shall next discuss how the Revenue Center could change its sources and level of funding through "contracting in" and a new revenue venture.

MAFRC SERVICES AND CONTRACTING IN

The Municipal Athletic Facility is essentially in the business of providing one service—a rental facility to stage athletic and entertainment events. As a Revenue Center, it would continue to provide this service and could also provide additional revenue-generating activities or ventures that its managers chose to implement. All the MAFRC services could continue to receive revenues from the General Fund if their public good content indicated that they merited such revenues.

The services of the MAFRC might be characterized partly as public goods to the extent that they are directed to the youth of Saint Paul. The benefits of the stadium spill over to the community at large because youngsters are kept active and diverted from delinquency and mischief. Table B.3 lists the services currently supplied by the municipal stadium and the age group at which each service is directed.

The current level of General Fund support for the Municipal Athletic Facility implies that, on average, the facility's services have a public good component of about 84 percent. We have not reviewed the fees the facility should charge for each individual service to maximize revenues, but it is clear that without General Fund revenues, the
Table B.3

INVENTORY OF MAFRC SUMMER SERVICES

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<th>Service</th>
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<td>Stadium rentals</td>
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<td>Senior Municipal Baseball</td>
<td>High school</td>
</tr>
<tr>
<td>American Legion</td>
<td>Adult promoters</td>
</tr>
<tr>
<td>Exhibition games</td>
<td>High school</td>
</tr>
<tr>
<td>Regional and local high schools</td>
<td>High school</td>
</tr>
<tr>
<td>State Baseball Tournament</td>
<td>High school</td>
</tr>
<tr>
<td>All-Star Baseball</td>
<td>High school</td>
</tr>
<tr>
<td>Private high schools</td>
<td>High school</td>
</tr>
<tr>
<td>Championship Municipal Football</td>
<td>Through 8th grade</td>
</tr>
<tr>
<td>Senior touch football</td>
<td>Adults</td>
</tr>
<tr>
<td>Colleges</td>
<td>College age</td>
</tr>
<tr>
<td>Parking</td>
<td>Driving age</td>
</tr>
<tr>
<td>Concessions</td>
<td>All ages</td>
</tr>
</tbody>
</table>

The stadium could not break even unless there were a sixfold increase in revenues from beneficiary charges. For example, rental rates for softball games in the stadium might have to be increased from about $100 to $600 per game, a price most teams would find exorbitant. The MAFRC might continue to provide services like this by cross-subsidizing them through revenues from a new revenue venture.

A POTENTIAL REVENUE VENTURE

The success of the MAFRC would be measured by its ability to offer services that generate new funding. A new line of services could be provided through a revenue venture that would turn the facility into a year-round sports and entertainment complex. With a capital investment of approximately $400,000, an inflatable fabric bubble 275 feet wide, 230 feet long, and 75 feet high could be constructed over the stadium’s existing softball diamond.8 Golf driving-range practice,

8The standard fabric golf bubble constructed by Air Structures International (ASI) of Teppan, New York, one of two experienced bubble manufacturers that we contacted, costs $320,000 and includes a heating and pressurization system, interior golf-ball netting, lighting, and full installation. Site construction and other miscellaneous costs such as trucking are estimated very roughly to cost an additional $80,000.
indoor “dead-type” softball, soccer, jogging, or any activity that requires a large playing surface and climate control would then be possible throughout the winter. During the spring, the bubble would be dismantled and stored to allow a full resumption of open-air activities.

Bubbles of this type already operate in Madison Heights, Michigan (a suburb of Detroit), White Plains, New York, and Edina, Minnesota. By charging patrons by the half-hour to drive golf balls or play softball, these facilities turned a profit during their first year of operation. A structure in Saint Paul could, in its first year of operation, generate enough income to help pay for some of the MAFRC services that are now financed by General Fund revenues and beneficiary charges.

Operating-Lease Agreements: Pros and Cons

The income generated by the proposed new venture would depend upon the amount of financial risk the expanded MAFRC assumed. The MAFRC could lease the stadium to private entrepreneurs who would finance, build, and operate the bubble. This option would assure a relatively small return through a rental fee. At the other extreme, the MAFRC could operate the bubble itself, assuming the commercial risk in exchange for higher potential earnings. Under self-operation, the bubble would be financed through borrowing and operated solely by city employees who would work for the MAFRC.

A private developer\(^9\) could lease the stadium land from the MAFRC during the winter and construct a removable bubble on it. The developer would finance, operate, and program the bubble, accepting all the risks but claiming most of the rewards. The MAFRC would provide the stadium grounds and would receive a flat-rate rental fee or a percentage of the gross revenues, or both. Both the Edina and the White Plains golf bubbles were financed under this type of agreement. The rental fee, of course, would depend on the outcome of the MAFRC’s negotiations with the developer but, as an example, Edina received about $10,000 in net revenues plus a new picnic structure worth about $65,000 in its first year of operation.\(^10\) Westchester County, N.Y., the owner of the land under the White Plains bubble, netted about $35,000 its first year of operation.

---

\(^9\)R. J. Investments of Saint Paul, the private developers who financed the Edina bubble, have already expressed interest in building a bubble in Saint Paul.

\(^10\)The city of Edina did not acquire its golf bubble to establish a major source of revenue. It wanted a risk-free investment that provided a unique recreational facility for its citizens. Edina receives a flat rental fee plus from 2 to 4 percent of the gross revenues from the bubble.
This type of operating lease is common. Los Angeles County, for example, leases prime beach-front land to private firms which can erect anything from three-star restaurants to hot-dog stands. The County maintains the long-term rights to the land, while the lessees provide the facilities. Saint Paul could incorporate this type of arrangement into other Revenue Centers in the Division of Parks and Recreation. For example, by leasing city-owned parcels with riverfront views to a restaurateur, a Revenue Center could increase the return on its idle land. The Parks and Recreation Division could rent Navy Island to a private promoter who would stage concerts on it, an activity that is currently under consideration. Obviously, the risks for the city of this type of arrangement are minimal compared to those of self-operating, but the potential profits are quite small.

Operating leases attract private sector investors primarily because renting is less expensive than owning: No capital has to be sunk into real estate purchases, the rent is deductible as an operating expense, and when a city is the landlord, there are usually no property taxes. But private investors have different interests from those of public authorities. The private investor usually wants a long lease and complete control of the facility. A lease for the stadium land in Saint Paul would have to be long enough to permit private sector developers to amortize all of their capital costs and earn a profit on the investment. Since a publicly owned and operated enterprise can borrow more cheaply than can its private counterpart, capital costs run higher for the private sector, so the payback period for a developer-operated bubble would be longer than that for one under MAFRC operation. The Edina lease extends for 15 years. A bubble in Saint Paul might tie the use of recreational land and the programs offered on it to a private operator for a similar length of time.

Leasing the bubble would accentuate conflicts over objectives and methods. Should the stadium maximize the revenue return by charging higher fees, or should it minimize the risk through lower fees? The city might wish to encourage certain uses by subsidizing them. These

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12The fabric bubble has an expected lifespan of at least 10 years, and with good care, probably 15 years. The Revenue Center might prefer to negotiate a short-term lease with the further option of assuming the operation and ownership of the bubble after a prescribed period of time—possibly after the bubble's rental builds enough of a cash reserve for the MAFRC to assume the potential risks.
decisions would be shaped by the City Council's and the citizens' perception of the public good. With a leased bubble, Saint Paul would have to negotiate policies with a private operator, to whom more constraints might imply lower profits.

Private operation translates into less-effective control over programming and pricing of the facility's activities and less control of the quality of the bubble's design and operations. Under leasing, conflicts can arise out of the tradeoffs between profit and social responsibility. Under Revenue Center operations, profits could be used to subsidize consumption by groups deemed socially worthy. Such arrangements can be written into leases, but they would be easier to implement under MAFRC operation.

In sum, the operating lease has many negative aspects, not the least of which is the reduction in the Revenue Center's anticipated revenues. The private developer assumes a financial risk and is entitled to the lion's share of the profits. But a leasing arrangement frees the city from having to raise new capital on its own and from bearing the risk associated with entrepreneurial activities.

Expenditures for Self-Operating the Proposed Revenue Venture

To construct and self-operate the new venture, the MAFRC would need cash. Since it would not yet have built up capital from retained earnings, it would have to borrow. A Revenue Center can borrow for a new venture through city general obligation or revenue bonds, from the General Fund, from other Revenue Centers that have amassed sufficient retained earnings, or directly from the builder of the structure.

The MAFRC must borrow more than the $400,000 capital costs of the bubble, to cushion it against contingencies and to pay operating bills until it begins to receive income. A proposed city policy suggests that enterprise funds should generate sufficient revenue to maintain a

---

13The Council implicitly decides how much of an activity is a public good when it supports a service with General Fund revenues. This decision is made during the city's budget process and it is not always made quickly. The timing of such decisions may make it difficult to take advantage of an imminent opportunity to sign an operating lease with a private investor.

14During its first season, the Edina golf bubble experimented with different pricing schemes for senior citizens and children, not explicitly to subsidize them, but primarily to increase revenues. This season, the bubble is charging higher prices during peak-use hours.

15Moreover, the annual lease obligation is not included in the calculation of the state-imposed legal debt limit.
cash balance equal to at least two months' operating expenditures.\textsuperscript{16} We believe this is a good policy. We estimate two months' operating expenditure for the bubble to be $60,000.\textsuperscript{17} The total borrowing requirement is then $460,000.

If the MAFRC were to borrow this sum with a general obligation bond, amortized over five years at 8 percent interest, the bond would require an annual debt service payment of about $115,200 (Table B.4). If paid back over 10 years, it would require an annual payment of $68,500.\textsuperscript{18}

Table B.4 also projects the MAFRC's operating expenditures for the bubble, forecasting operating expenditures with the methods outlined in Fernandez, Neela, Caggiano, Pascal, and Hillestad. We estimated the advertising expenditures in Table B.4 after consulting with other golf structure operators.

\textbf{Revenues from Self-Operation of the Revenue Venture}

It is difficult to estimate the new revenue venture's income without historical data on prices and the quantity of service demanded. Without such data, we have insufficient understanding of demand elasticities, i.e., the effect of price changes on total revenues.\textsuperscript{19} Table B.5 displays high and low estimates of the bubble's potential revenues, based on varying estimates of demand for golf programs in the bubble.

Air Structures International (ASI), a bubble manufacturer, estimates that the bubble will operate at 40 percent capacity the first year of operation, rising to 60 percent capacity by the third year, and peaking at 70 percent capacity by the sixth year. An estimate consistent with actual experience in Edina, White Plains, and Madison Heights projects a sluggish start at 25 percent capacity, as Revenue Center managers work out operating and programming bugs and as the popularity of the bubble slowly increases. Under this more conservative estimate, the golf bubble would achieve a long-range operating rate of 50 percent after three years of operation; it would continue at this rate

\textsuperscript{16}Proposed 1984 Budgets: Goals and Policies, op cit., p. 2.

\textsuperscript{17}The accumulated surplus from bubble operations would not reach this amount until the second year. Table B.10 later in this appendix shows how we calculated operating expenditures.

\textsuperscript{18}An interest rate of 8 percent was considered reasonable, since in 1983, Saint Paul general obligation bonds paid 7.38 percent.

\textsuperscript{19}In the MAFRC action plan, we attempt to identify the market for the services the new venture will offer and the prices it might charge for those services. These are necessary steps in a feasibility study to decide the merits of the venture. We did not, however, perform a thorough feasibility study.
Table B.4

MAFRC EXPENDITURES FOR SELF-OPERATION OF THE REVENUE VENTURE
(thousands of dollars)

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<thead>
<tr>
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<td>106.1</td>
<td>111.4</td>
<td>117.0</td>
<td>122.9</td>
<td>129.1</td>
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<td>Supplies</td>
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<td>10.9</td>
<td>11.4</td>
<td>11.9</td>
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<td>91.1</td>
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<td>104.6</td>
<td>112.1</td>
<td>120.2</td>
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<td>175.4</td>
<td>185.5</td>
<td>197.5</td>
<td>209.0</td>
<td>221.6</td>
<td>234.9</td>
<td>249.1</td>
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<td>11.2</td>
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<td>13.3</td>
<td>14.1</td>
<td>14.9</td>
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<td>16.8</td>
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<td>186.3</td>
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<td>209.4</td>
<td>221.5</td>
<td>234.9</td>
<td>249.0</td>
<td>264.0</td>
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<td>296.9</td>
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<tr>
<td>Capital</td>
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<td>115.2</td>
<td>115.2</td>
<td>115.2</td>
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<td>Advertising</td>
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<tr>
<td>Total</td>
<td>305.5</td>
<td>311.5</td>
<td>317.9</td>
<td>329.6</td>
<td>341.7</td>
<td>239.9</td>
<td>253.0</td>
<td>269.0</td>
<td>284.9</td>
<td>301.9</td>
</tr>
</tbody>
</table>

Table B.5

ESTIMATED REVENUES FROM THE MAFRC GOLF PROGRAM
(thousands of dollars)

<table>
<thead>
<tr>
<th></th>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>468.0</td>
<td>511.2</td>
<td>764.5</td>
<td>794.0</td>
<td>822.4</td>
<td>999.2</td>
<td>1,039.2</td>
<td>819.0</td>
<td>819.0</td>
<td>819.0</td>
<td>8,889.4</td>
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<tr>
<td>Usage rate (40%)</td>
<td>(40%)</td>
<td>(60%)</td>
<td>(60%)</td>
<td>(60%)</td>
<td>(70%)</td>
<td>(70%)</td>
<td>(70%)</td>
<td>(70%)</td>
<td>(70%)</td>
<td>(70%)</td>
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<tr>
<td>Low estimate</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Revenue</td>
<td>292.5</td>
<td>387.1</td>
<td>445.9</td>
<td>529.3</td>
<td>617.6</td>
<td>713.7</td>
<td>742.4</td>
<td>777.5</td>
<td>802.6</td>
<td>840.6</td>
<td>6,129.2</td>
</tr>
<tr>
<td>Usage rate (25%)</td>
<td>(25%)</td>
<td>(30%)</td>
<td>(35%)</td>
<td>(40%)</td>
<td>(45%)</td>
<td>(50%)</td>
<td>(50%)</td>
<td>(50%)</td>
<td>(50%)</td>
<td>(50%)</td>
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</tr>
</tbody>
</table>
indefinitely. For each of the revenue estimates, the average charge per half-hour would rise annually with inflation.20

Additional revenues for concessions and other programming such as softball are less certain. Table B.6 shows how such revenues are calculated and estimates their potential for the winter of 1984. These are illustrative estimates and are not necessarily conservative. The revenue potential of other activities not included in this table is more difficult to estimate.21

Table B.7 combines the projected expenditures and the revenues of the MAFRC to determine how much new income the expanded venture would yield. We believe the low estimate in Table B.5 is more realistic, and have used it in preparing the revenue estimates shown in Table B.7. Even without General Fund support or additional services, the bubble would have a cash-flow surplus in its first year.22 By the sixth year of operation, when capital costs have been covered, the surplus could reach almost a half-million dollars.

Table B.7 also shows the rentals the Revenue Center would receive if the bubble were to be financed and operated by private investors. At 3 percent of revenues (consistent with Edina's lease), rentals would have reached a maximum value of only about $25,000 by 1993. Although leasing the land to a private operator is virtually a risk-free activity, the rent the MAFRC would receive is not large enough to replace the Municipal Athletic Facility's current General Fund support.

THE MAFRC BUDGET

How much could income from the new revenue venture reduce the amount of General Fund support now required by the Municipal Athletic Facility? The estimated MAFRC budget shown in Table B.8 indicates that within five years of operation, the revenue venture should be able to fund completely the current Municipal Athletic Facility

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20The estimates in Table B.5 assume the bubble would be used as a driving range with 50 golf tees. If all 50 are used for 13 hours a day (8:00 a.m. to 9:00 p.m.) during a 180-day schedule, the bubble would be operating at 100 percent capacity. This allows for 2 hours of other use during a 15-hour business day. For example, golf balls might be picked up in 30 minutes, leaving 90 minutes for softball use. If an average of $5.00 per half-hour per tee were charged in 1984, the bubble would realize a maximum of $1,170,000 in gross revenues. We have applied the usage rate to this amount.

21The Revenue Center might schedule concerts in the bubble during the winter and in the stadium during the summer. The city averaged $25,000 net per concert for three concerts in 1979, before such events were discontinued by ordinance. The city might net $30,000 to $125,000 for three to five concerts during the year ($10,000 to $25,000 per concert). The range of revenues is wide because of uncertainty about how many people would attend these events.

22This surplus assumes that the MAFRC does not need its operating contingency funds.
### Table B.6

**POTENTIAL REVENUES FOR THE MAFRC FROM ADDITIONAL PROGRAMS IN THE BUBBLE**

(dollars)

<table>
<thead>
<tr>
<th>Source</th>
<th>Usage Assumed</th>
<th>Potential Additional Revenue in 1984</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concessions (no alcoholic beverages)</td>
<td>26 half hours a day 180 days a winter 50 golf tees 25% usage rate 30% net profit $0.50 average purchase</td>
<td>8,775</td>
</tr>
<tr>
<td>Indoor softball</td>
<td>2 hours per night 180 nights a winter $120 per hour</td>
<td>43,000</td>
</tr>
<tr>
<td>Increase golf fees</td>
<td>50 tees 26 half hours per day 180 days 25% usage rate $1.00 charge</td>
<td>58,500</td>
</tr>
</tbody>
</table>

### Table B.7

**MAFRC BUSINESS VENTURE BUDGET**

(Thousands of dollars)

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>352.5</td>
<td>367.1</td>
<td>445.9</td>
<td>529.3</td>
<td>617.6</td>
<td>713.7</td>
<td>742.4</td>
<td>777.5</td>
<td>802.6</td>
<td>840.6</td>
</tr>
<tr>
<td>Expenditure</td>
<td>305.5</td>
<td>311.5</td>
<td>317.9</td>
<td>329.6</td>
<td>341.7</td>
<td>339.9</td>
<td>283.0</td>
<td>269.0</td>
<td>284.9</td>
<td>301.9</td>
</tr>
<tr>
<td>Annual surplus</td>
<td>47.0</td>
<td>55.5</td>
<td>128.0</td>
<td>199.7</td>
<td>275.9</td>
<td>473.8</td>
<td>489.4</td>
<td>508.5</td>
<td>517.7</td>
<td>538.7</td>
</tr>
<tr>
<td>Rentals at 3% of gross revenues</td>
<td>8.8</td>
<td>11.0</td>
<td>13.4</td>
<td>15.9</td>
<td>18.5</td>
<td>21.4</td>
<td>22.3</td>
<td>23.3</td>
<td>24.1</td>
<td>25.2</td>
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*Includes $60,000 borrowed to create a surplus for unforeseen operating expenditures.*
Table B.8
MAFRC BUDGET: CURRENT PROGRAMS AND BUSINESS VENTURE
(thousands of dollars)

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</thead>
<tbody>
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<tr>
<td>Operating</td>
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<td>187.5</td>
<td>197.6</td>
<td>208.7</td>
<td>220.5</td>
<td>233.1</td>
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<td>Capital</td>
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<td>89.2</td>
<td>93.6</td>
<td>98.7</td>
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<td>307.4</td>
<td>324.4</td>
<td>342.6</td>
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<td>196.3</td>
<td>202.7</td>
<td>214.4</td>
<td>226.5</td>
<td>239.9</td>
<td>253.0</td>
<td>269.0</td>
<td>284.9</td>
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<td>115.2</td>
<td>115.2</td>
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<tr>
<td>Total</td>
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<td>317.9</td>
<td>329.6</td>
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<td>617.6</td>
<td>713.7</td>
<td>742.4</td>
<td>777.5</td>
<td>802.6</td>
</tr>
<tr>
<td>Total</td>
<td>390.4</td>
<td>407.0</td>
<td>487.7</td>
<td>573.1</td>
<td>665.5</td>
<td>761.7</td>
<td>792.8</td>
<td>830.5</td>
<td>858.3</td>
</tr>
<tr>
<td>Surplus</td>
<td>-149.5</td>
<td>-163.1</td>
<td>-92.7</td>
<td>-33.2</td>
<td>30.6</td>
<td>218.4</td>
<td>214.4</td>
<td>218.9</td>
<td>211.6</td>
</tr>
</tbody>
</table>

By 1993, the Revenue Center could run an annual surplus of $215,000. Note that Table B.8 does not include income from contracting in or other sources the MAFRC could tap, such as increased beneficiary charges for existing services or charges for new services (including softball in the bubble). Such revenues would produce an even larger surplus.

Every service that the MAFRC offers should be reviewed to determine its public good content. Using the rationale presented in Section II, the central administration might wish to provide General Fund support for youths who play golf or softball in the bubble. For equity reasons, it might also wish to offer discounts to the elderly or the poor who use the bubble. This could be accomplished through rebates on season passes.

As the surplus grows, it would become available to share with the General Fund and to reward employees who have worked to build the operations of the Revenue Center. The MAFRC could also lend its retained earnings to other Revenue Centers that require venture capital, or it could help support other Parks and Recreation activities, such

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23During this same period, it would be building up a capital improvement fund that would eventually help replace the stadium.
as municipal athletic leagues, which are directly related to the functions of the MAFRC.

MANAGING AND STAFFING THE MAFRC

Although the MAFRC would act somewhat autonomously, it should remain accountable to the central administration. As discussed in Section IV, performance monitoring is the key to maintaining accountability. The central administration must be able to measure the level of merit services provided under the “contracting in” agreement. For most MAFRC services, this should not be difficult, since output is well defined. Events staged in the stadium and golfers who hit golf balls could be counted. If the central administration were to decide that the public component of the service depends upon the characteristics of the recipients (i.e., age or income level), it could simply appropriate a percentage of the cost of providing the service for young, disadvantaged, and elderly consumers. This amount could be based on knowledge of services offered in previous years, but a better method would be to base the appropriation on the actual number of, say, elderly golfers or youth-oriented events in the given year. This would provide a strong incentive for the MAFRC to actively seek clients who deserve a public subsidy.

MAFRC performance would also be monitored within Saint Paul’s normal chain of command. The Revenue Center manager would report directly to the Superintendent of Parks and Recreation, who, of course, is ultimately accountable to the Director of Community Services, and to the Mayor and the City Council. The head of the Center might want to appoint a revenue venture manager to shepherd the new bubble through its early phases.

Once under way, the MAFRC would absorb the current municipal stadium staff. Since many existing staff are part-time and seasonal, the winter revenue venture’s operations would be complementary. Similar skills—maintaining athletic fields, selling food and beverages, and staging sport and entertainment events—would be needed in each season. The MAFRC might also find appropriately skilled employees at work in other city activities. The golf course, for example, employs people during the summer who sell golf equipment, give lessons, and maintain facilities.24

As employees of one of the first Revenue Centers, MAFRC staffers would be in a unique and somewhat elite position. Their advice would

24The golf course also owns equipment that might be used in the bubble.
be sought by other city divisions that hope to build Revenue Centers. This attention would act as an incentive, and the city should foster it by encouraging the MAFRC to communicate easily and freely with other parts of the city.

**ACTION PLAN FOR THE MAFRC**

The following is a proposed step-by-step agenda for implementing the MAFRC:

1. Determine the service responsibilities.
2. Develop the asset inventory.
3. Plan the revenue venture.
4. Prepare the steady-state budget for the MAFRC.
5. Develop a multiyear financial plan.
6. Draft the Revenue Center charter.
7. Submit the charter for review.

1. **Determine the Service Responsibilities**

In general, city activities included in the MAFRC should (1) fit into the Revenue Center’s general mission and (2) lead to increases in the city’s net revenues or productivity. Some of the services offered by municipal athletics and municipal golf may meet these requirements.\(^\text{25}\) They and other appropriate activities should be examined for possible inclusion in the MAFRC.

2. **Develop the Asset Inventory**

Unless the boundaries of the MAFRC grow beyond those described above, the municipal stadium is the MAFRC’s only capital asset. The stadium cost $3,505,000 in 1982.\(^\text{26}\) Its 1984 replacement cost, adjusted to reflect two years of inflation, is $3,785,400. The stadium is expected to last for another 50 years.

The annual cost of using a capital asset equals the current value of the asset divided by the number of years of use remaining. The cost of using the stadium is thus $3,785,400/50 = $75,700 per year (in 1984

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\(^{25}\)Under current policy, the Municipal Athletic Facility charges municipal athletics 115 percent of the marginal cost of staging events in the stadium. The Municipal Athletic Facility should be charging the full cost.

\(^{26}\)The Port Authority paid $2,000,000 in cash and took over $757,000 in remaining general obligation bonds in exchange for Midway Stadium. Other costs included $500,000 for lighting and $248,000 for miscellaneous expenses.
dollars). We inflated this amount annually after 1984, using the
construction index and the techniques created in Phase I of the study.\textsuperscript{27}

3. Plan the Revenue Venture

The MAFRC should develop a business plan to convince the central
administration and the City Council that construction of a bubble is a
worthwhile venture. The business plan should

- Identify the market for the bubble’s programs
- Develop a marketing plan
- Identify the production requirements
- Develop a financial plan.\textsuperscript{26}

**Identify the market.** To make a profit, the MAFRC’s revenue
venture should sell to markets that are large and growing. The busi-
ness plan should identify and describe those markets. The programs
the MAFRC offers should then be tailored to meet the market demand.

Although we suggest that the revenue venture’s primary activity
should be golf driving-range practice and its secondary activity should
be softball, the MAFRC should not lock itself into any programs before
it determines that a market for them exists. Market research can be
expensive, but it is worthwhile in view of the costs of failed programs.
A market survey will help the MAFRC decide what programs to offer
and what image the bubble should convey to its prospective clients.\textsuperscript{29}
The image the facility initially presents will define the facility; the
“wrong” image could severely limit its use by different classes of custo-
mers. The market survey should answer two questions:

- What are the characteristics and size of the bubble’s market?
- What share of that market could the MAFRC capture?

Available information, some of it anecdotal, hints at the size of the
Saint Paul area market for an indoor golf driving range:

- If golf is as popular locally as it is nationally, there are at least

\textsuperscript{27}See Fernandez, Neels, Caggiano, Pascal, and Hillestad, op. cit.

\textsuperscript{26}Saint Paul’s Planning and Economic Development Department distributes a docu-
ment entitled *How to Prepare a Business Plan—Guidelines for Entrepreneurs* that sug-
gests questions a business plan should address and the form the plan should take.

\textsuperscript{29}Once the bubble is operational, the MAFRC should then conduct a market audit,
detailing who uses the bubble and why.
200,000 golfers in the Minneapolis-Saint Paul area and 17,000 in Saint Paul.  
- While Minnesota's golf season is relatively short because of weather, it is one of the most active in the entire nation. There are at least 16 golf clubs in Saint Paul and at least 75 in the nearby metropolitan area.  
- Approximately 30 percent of the adult residents who live near the municipal stadium have expressed an interest in playing golf.  
- The area near the municipal stadium supports at least three private golf driving ranges and one small public one. These ranges close during the winter.  
- Owners of the Edina Golf Dome have suggested that the Saint Paul-Minneapolis area could support at least four golf bubbles.  
- Alternative recreational opportunities and unseasonably warm winter weather could reduce bubble usage. Because the weather in Saint Paul is so severe, a bubble there may do better than the bubbles in White Plains and Madison Heights.  
- An MAFRC bubble would be strategically located to dominate the market to the north and east of the Mississippi River and parts of northern Minneapolis.  

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30 Nationally, about 16 percent of Americans play golf at least once a year. Almost 70 percent of those are avid golfers, the kind who might use a driving range, playing 5 or more times a year. (Data for the 12 months from June 1976 to June 1977, U.S Department of the Interior, Heritage Conservation and Recreation Services, The Third Nationwide Outdoor Recreation Plan, December 1973.) According to a 1982 A.C. Nielsen Survey, golf is the twentieth most popular participation sport in the United States, behind swimming, which was the most popular, jogging (eighth), and softball (eleventh).  
32 Estimates drawn from information provided by Vic Wittgenstein and the Minnesota Golf Association, 1983 Membership Roster.  
33 From a special area poll of 566 residents within approximately 5 miles of the stadium, excluding Minneapolis. Of the 30 percent, almost half felt that they play golf less often than they would like to. Of those, 8.6 percent did not know how to play, 38.6 percent had other activities and business that kept them from playing, and 16 percent felt golf was too expensive. About 37 percent of the respondents were 18 to 34 years of age, 39 percent were 35 to 59, and 24 percent were over 69. From Metropolitan Council, Leisure in the Twin Cities Area Survey.  
34 The Country View Golf Course on the northern Saint Paul border, the Fairway Golf Driving Range, and George's Golf Range.  
35 Private communication from Ron Flanagan, R. J. Investments.  
36 However, attendance at a Saint Paul bubble would not be insulated from unseasonable weather. The Edina bubble had poor attendance on weekends whenever the temperature climbed well above freezing.  
37 By agreement with Edina, ASI will not build another bubble within 10 miles of the Edina bubble. The municipal stadium is about 13 miles away. If the Saint Paul bubble received a 10-mile territorial protection (a possibility expressed by ASI representatives),
We developed the following picture of the type of person who might use the golf bubble in the Saint Paul area:

- The median golfer in the North-Central part of the United States is male, 38.2 years of age, comes from a family with an income of $30,100, has 3.3 years of college education, and spends about $350 a year on golf fees, rentals, equipment, and clothing.\(^{37}\)

- The population of the age group most likely to play golf, i.e., those 20 to 64 years old, is expected to decline in Saint Paul by 4.7 percent. However, the total population for the Minneapolis-Saint Paul metropolitan area is expected to increase by 11 percent by 1990 and by another 9 percent by the year 2000.\(^{38}\)

- Middle and upper-middle class patrons appear to be the mainstay users of the Madison Heights and White Plains golf bubbles.\(^{39}\)

- Although the average Saint Paul resident is not as wealthy as the average resident in Edina, Madison Heights, or White Plains, a MAFRC bubble should do comparatively well. Saint Paul residents who live near the municipal stadium are, on average, wealthier than the average Saint Paul resident, and Saint Paul has more middle and upper-middle class residents than the other three cities combined.\(^{40}\)

- Men are the golf bubble’s primary clients. Most are ardent golfers who come to the bubble alone. Few families use the bubble, although there is an occasional husband and wife team.


\(^{38}\)Estimates from Marv Bunnell, City of Saint Paul, and from the Metropolitan Council. Total population for the metropolitan area is expected to be 2.47 million by the year 2000.

\(^{39}\)The upper-class residents can more readily indulge in winter recreational activities that are either out of town (Florida golf courses) or more expensive (the theater).

\(^{40}\)The 1979 median household incomes by city were Edina, $30,201; White Plains, $20,125; Madison Heights, $21,540; Saint Paul, $16,029. The 1979 median household incomes by area were Hamline-Midway, $20,556; Merriam Park-Lexington-Hamline, $21,417; and Groveland-Macalester, $26,112. The number of households with incomes above $25,000 in 1979 were Edina, 10,566; White Plains, 7,665; Madison Heights, 5,135; and Saint Paul, 27,970.
When women use the range, they usually come in groups, or with a male companion. Seniors usually come between 10 a.m. and 3 p.m., Monday through Friday.41

A market survey should cross-check these findings and estimate more precisely how many people would use the bubble, how frequently they would use it, what their characteristics are, and where in the Twin Cities area they might come from. The results of the market survey would help the MAFRC managers estimate the bubble's revenue yield from golf programs. As a part of the same survey, the MAFRC should also estimate the market for softball and other programs that could be staged in the bubble.

**Develop a Marketing Plan.** Program planning is market positioning. Using results from the market survey, planners should identify the different markets the bubble could cater to and divide them into segments of homogeneous groups. Programs can then be scheduled for those groups.

In their study of golf course management, Gray and Crompton42 emphasize that people do not buy specific programs; they buy the expectations of benefits from those programs. The bubble's programs should be targeted toward people who seek similar expectations of benefits.43 These groups could be identified by socio-demographic characteristics such as age, income, sex, and location; but it would probably be a mistake to program the bubble for the "average" user based on these characteristics, since there probably are not many of them. Instead, the bubble's programs should be tailored to clusters of clients with similar wants, interests, and recreational preferences, based on their sociodemographic characteristics.

Before the MAFRC plans the bubble's physical specifications, it should have made some decisions about what programs it will offer. Once the facility is completed, the range of possible activities is fixed by the fabric walls.

If the bubble houses a driving range, its dimensions must satisfy the trajectory of a golf ball. The standard golf bubbles of course do.44 But

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41Observations made by operators at the Edina and White Plains bubbles.
43Using results from a study of three golf courses, these authors suggest that golfers seek these major benefits from playing golf: escape from pressures, social contact, escape from family, business contacts, exercise and physical fitness, social recognition and social independence, and meeting new people.
44The standard ASI golf structure is about 275 ft by 230 ft long and covers about an acre of land. Although much smaller than an outdoor driving range (most of which cover 10 or more acres and allow for wood drives of over 600 feet), the dome is large enough
the standard golf bubble will permit only indoor softball—a game played with a "dead" softball. It is not large enough for outdoor-type softball nor is its fan-like shape optimal for concerts.

In Madison Heights, indoor softball caught on quickly. Three hours of league indoor softball were played each night during the 1982–1983 season. With firm commitments in hand and teams waiting in line for a chance to play in the league, the operators planned to allocate 6 hours per night to softball play in the 1983–1984 season.

Although it has become popular when introduced elsewhere, the popularity of indoor softball is not assured in Saint Paul. The popularity of outdoor slow-pitch softball is more certain. There are about 26,000 players on 1300 softball teams in city leagues. Nine of every ten teams play slow-pitch (rather than fast-pitch) softball. Outdoor-type softball, both slow-pitch and fast-pitch, might be played in a bubble 350 feet by 250 feet by 85 feet. The MAFRC must balance the extra capital and operating expenses of a larger dome against the additional revenues outdoor slow-pitch softball might draw. A well-constructed market survey could assist in making this kind of decision.

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45Spectators can watch along the first-base line, which is used during golfing hours as the tee line. If an upper deck is installed for golfers, it too can seat additional softball spectators. (Jane Seagull, "Indoor Softball," Parks and Recreation Resources, July/August 1983.)

46During the 1982–1983 season, golfers used the bubble from 8:00 a.m. to 9:00 p.m. Softball players took the field at 9:30 and continued until 12:30 a.m. or later. There was one difficulty with this schedule: Softball players had to help pick up many of the 80,000 golf balls that eluded the "picker" machine. Some objected. This problem could be eliminated in a Saint Paul bubble by installing an automatic golf ball picker. The White Plains bubble has this device, but it is not clear whether it is compatible with softball play. (Seagull, op. cit.)

47Robert T. Madden, Vice President of Sales, Environmental Structures, Inc., the builders of the Madison Heights bubble.

48Slow-pitch softball requires at least 300 feet from the backstop to the outfield wall; fast-pitch needs 250 feet. Most hit softballs peak at less than 80 feet. (Athletic Institute and the American Alliance for Health, Physical Education, Recreation and Dance, Planning Facilities for Athletics Physical Education and Recreation, 1979; and Bill Plummer, the Amateur Softball Association of American, Oklahoma City, Oklahoma.)

49This bubble would be specially built for Saint Paul and (with heating, pressurization system, netting, lighting, and site construction) would cost approximately $550,000. It would also be proportionately more costly to heat than the smaller bubble.

50There may be promotional advantages to playing indoor softball, because an intercity rivalry with Edina could be promoted which would increase the use of both structures.
Golf and softball programs have earned the most revenues, but other programs have been tried in bubbles. Indoor running was offered during the early morning at the Edina bubble at 10 cents a minute. Although it was not profitable in Edina, the Saint Paul bubble would have a better location and would provide easy access for early morning joggers.

Football, soccer, volleyball, and company picnics appear to have greater potential. A certain time might be set aside for recreation specifically tailored for the elderly, who find it exceedingly difficult to exercise in the winter. In the market survey, citizens should be asked what kinds of recreational programs they would support in the bubble. Planners should also speculate on what recreational activities will be popular during the next 15 years.

Whenever possible, a new program should be pilot-tested before the MAFRC invests development money for special equipment. Since the primary uses of the bubble would probably be golf and softball, there would be little risk of building a structure rendered useless by the vagaries of a sporting fad. But the MAFRC managers should be careful not to change programs too often. Frequent schedule changes weaken client loyalty.

A wide range of programs meets the recreational needs of most people, so the offering of one program over another may not always be significant. Therefore, programs should be scheduled to maximize profits. If all costs for all programs, are equal, profitability should be judged against golf usage. But the cost of offering different programs is usually not equal. Golf balls must be collected before other programs can begin, and the wear and tear to the facility will vary with the sport that is played in it. The revenues from ancillary services such as concessions, could also change with the clientele. Golfers will purchase golf equipment. Softball players may drink more beer.

Most bubbles have found that the demand for golf differs from that for softball by the time of day and by the age of the clientele. Table B.9 suggests a possible weekday bubble schedule that takes these differences into account. It assumes that the younger groups will prefer to play softball and that they will be more inclined to play at night. The elderly will prefer a slower-paced activity and will have a

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51 Hundreds of elderly citizens lawn bowl daily at a club in Santa Monica, California. Seniors in Saint Paul might enjoy participating in this or similar sports.
Table B.9
AN ILLUSTRATIVE WEEKDAY BUBBLE SCHEDULE

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Characteristic of Client</th>
</tr>
</thead>
<tbody>
<tr>
<td>6:30 to 8:30</td>
<td>Jogging</td>
<td>All ages prior to work or school day</td>
</tr>
<tr>
<td>8:30 to 11:30</td>
<td>Lawn bowling</td>
<td>Elderly</td>
</tr>
<tr>
<td>11:30 to 1:30</td>
<td>Golf</td>
<td>Businessmen during lunch hour</td>
</tr>
<tr>
<td>1:30 to 3:30</td>
<td>Golf</td>
<td>Elderly</td>
</tr>
<tr>
<td>3:30 to 6:00</td>
<td>Golf</td>
<td>College and high-school age</td>
</tr>
<tr>
<td>6:00 to 9:00</td>
<td>Golf</td>
<td>All ages</td>
</tr>
<tr>
<td>9:00 to 9:30</td>
<td>Ball pickup</td>
<td></td>
</tr>
<tr>
<td>9:30 to 12:30</td>
<td>Softball</td>
<td>Leagues for ages 16 to 45</td>
</tr>
</tbody>
</table>

greater opportunity to play during the day. On weekends, the schedule would be adjusted.\(^{52}\)

The MAFRC should promote the bubble’s programs by communicating to the market segments identified by the survey, some of which are harder and more expensive to communicate with than others.\(^{53}\) Different market segments may require different promotional channels and techniques. Failure to obtain clients from each targeted market segment may not necessarily mean that the group is uninterested; the program may have been presented the wrong way, at the wrong time, or at the wrong price. The advertising techniques used should include personal selling (interacting personally in a professional capacity), publicity (unpaid forms of personal communication and use of the media), sales promotion and incentives, and paid advertising. Since the bubble would be a novelty, the MAFRC should capitalize on the free media

\(^{52}\)There is anecdotal evidence to suggest that the bubble might be programmed for two seasons: November-January for softball, and January-April for golf. Warren Redholtz, Executive Director of the Minnesota Golfers Association, observed that although outdoor driving ranges in the Saint Paul area overflow with clients during the summer, Edina’s inaugural fall season as an indoor driving range was disappointing. Most Twin Cities’ golfers put their golf clubs aside in the fall. Their interest in golf returns in January when golf tournaments reappear on television. (However, it is difficult to know the extent to which the January upswing in usage at Edina was due to increasing knowledge of the bubble’s existence rather than to a resurgence of interest in golf.

\(^{53}\)A differentiated marketing strategy will almost certainly be more costly. Are there hidden costs to attracting additional groups? Greater wear and tear or need for equipment? Do the segments have differing abilities to pay the price? Do they come from different occupations (Are people who work in certain occupations more likely to play golf)? Do they have different behavioral characteristics? Different usage rates?
attention it would receive when it first opens. Press releases should be distributed.

Following the bubble's opening, people will have to be encouraged to try the facility. There are a number of strategies the MAFRC might employ:

- Contact golfers through mailing lists or through lists of golfers that most courses keep. Lure golfers at city courses with a free half-hour pass. Book golf lessons year-round through city programs or with the Recreation and Parks departments of other cities.
- Distribute promotional leaflets at city government events. Stuff tax bills with literature about the bubble. Have people pay their tax bills at the bubble. Provide the local ward councilman with an office in the bubble.
- Get Savings and Loan Associations to offer a day at the bubble as an incentive to opening a new passbook account.
- Advertise in newspapers, on radio, and on billboards. Purchase television advertisement spots to be shown during programs that are particularly male-oriented, such as sports events, including golf tournaments.
- Promote specific family-related services that the bubble will provide, such as a game room for children or child care services.
- Woo clients in summer softball programs by promoting year-round leagues.
- Attract local college and high-school golf teams with special group rates during certain hours. Hold a free open house to let them experience the bubble. Let them find out how superior

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54 The imposing white bubble actually acts as its own billboard especially at night when it is lit up. The stadium is an an excellent location. An average of approximately 30,000 vehicles pass the municipal stadium on Snelling Avenue every day, and another 10,000 pass it on Pierce-Butler. Each vehicle has approximately 1.8 passengers. The traffic flow that passes the Saint Paul bubble would be much heavier than that which passes the Edina bubble. The Edina bubble is not visible from a main road, and each day fewer than 2000 vehicles pass it. (Personal communication from Jim Stahlake, Saint Paul Department of Public Works and the Edina Department of Public Works.)

55 Edina used television advertising. Madison Heights spent very little on advertising and found that the need declined even more over time. It now spends about $700 annually on advertising. White Plains hired a public relations firm and used newspapers, radio, billboards, and hand-distributed leaflets. It did not use television because it is in the expensive New York City television market. White Plains' first year's advertising campaign cost $35,000.

56 There are four colleges within a few miles of the stadium that have intercollegiate golf programs: Bethel College, Concordia, Hamline University, and the University of Minnesota.
the golf bubble is to hitting golf balls in a cage in the cellar of a gymnasium.

- Encourage businessmen to come during their lunch hours by offering special midday activities such as group golf lessons. Serve lunch and offer beer and alcoholic beverages.
- Actively cultivate a corporate constituency. Consult the local corporations in Energy Park and elsewhere on what programs to offer in the bubble.
- Advertise on corporate bulletin boards and in corporate newsletters. Reserve blocks of time for corporate groups, letting the corporate community identify its preferences. Use the social group networks already established in the corporations. Let the bubble become the hub for challenges and competitions within and among corporations. Sponsor corporate picnics in the bubble and encourage corporate softball leagues.
- Identify the corporate opinion leaders and encourage them to use the bubble. Give top corporate leaders free access to the bubble so that other employees will feel that the bubble is a desirable place in which to spend their lunch hours.

Perhaps most important, let the bubble promote itself by keeping the quality of the experience high. Loyal patrons are crucial to a golf bubble, and they can continue to be attracted if the facility is committed to quality. At some outdoor ranges, 80 percent of the customers are repeats. Most criticisms of golf ranges are that they are dirty and poorly maintained, with broken rubber tees, worn mats, and golf balls and targets of poor quality. The temperature should be kept right and the bubble should be kept clean. Golf balls should be cleaned at least once a week. Interesting targets, some with water splashes, should be installed, along with specially equipped video bays for teaching pros. Extra charges could be imposed for use of the video bays.

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57 Energy Park is expected to create hundreds of new jobs and add 2,500 new residents.
58 The corporations may be willing to donate additional equipment (e.g., special golf targets) or facilities.
59 This is a variation on the "trucks-parked-outside-the-diner" theory. Nathan's (the famous hot-dog restaurant on Coney Island) hired young men to dress in white cotton jackets and hang around his eatery conspicuously consuming hot dogs. His customers leaped to the right conclusion: If doctors eat them they must be good! (Quintessence).
61 Edins heats the bubble to between 30°F and 35°F above the outside temperature (about 85°F). In warmer White Plains, the bubble is kept at 20 to 30°F above the external temperature.
62 Golf balls used in the bubble do not get as dirty as those used in outdoor ranges.
The price for each program the bubble offers must be set so that the MAFRC can penetrate the market. Clients already have in mind an expected range of prices for an outdoor driving range. The introductory price for the programs will establish a “psychological price” that may strongly determine what can be charged throughout the life of the bubble.\(^{63}\)

Since the bubble’s programs are primarily private goods, their price should be guided by the revenue-based procedures described in Section II. These procedures are based on willingness to pay, rather than costs. If people are unwilling to pay the full cost of a program, the MAFRC should reconsider whether it should be providing that program. Three types of revenue-based procedures are relevant to the bubble: market pricing, revenue maximizations, and discriminatory pricing.

The market price—the charge levied by other bubbles—signals the MAFRC how much it can charge. We assumed the MAFRC would charge golfers an average of $5.00 per half-hour of use. This is lower than the average price charged at other golf structures. The Edina Golf Bubble charges $6.00 per half-hour of prime time, and $120 per hour to rent the bubble for softball. Madison Heights charges $6.00 per half-hour and $1.00 for each additional 6 minutes. White Plains charges $6.00 per half-hour on weekdays and $7.00 on weekends.\(^{64}\)

Of course, only the Edina golf bubble would be competitive with a MAFRC bubble and even then the city might be able to charge more than Edina does because it is in a different location. Clients will be willing to pay more if they can spend less time traveling to the bubble.

But the MAFRC bubble cannot charge too much. It will also be competing with the alternative recreational programs that are available. At a certain charge level, clients will switch from golf and softball to squash, tennis, or skiing.

There will always be a few golfers willing to pay a high price to be able to hit golf balls in the winter, and a large number willing to pay a very modest price. But there is a price that maximizes the total revenue. Some experimentation with an eye to the cost of additional golfers as well as the revenue they generate, is necessary. If the fee is raised, the total number of golfers should decline, but each remaining golfer will pay more. Total revenue will either increase or decrease.


\(^{64}\)White Plains golfers have a substitute for their golf bubble, albeit a cold one. The White Plains bubble competes successfully with the Westchester Golf Range, which sells a bucket of 100 golf balls for $5.00 throughout the winter.
depending on the relative strengths of each effect. Although many of the costs for the bubble are fixed, total costs should decline if fewer patrons use the bubble: Fewer golf balls will be marred, and one less counter attendant might be needed. Prices therefore should be raised until total net revenues begin to decline.

Edina and White Plains practice discriminatory pricing, charging different prices at different times. Edina charges $4.00 per half-hour on weekdays from 9:00 a.m. until 3:30 p.m. White Plains charges $5.00 per half-hour on weekdays until 5:00 p.m. Westchester County encourages the White Plains bubble to offer discounts to patrons 17 and under and 65 and older. Seniors and youngsters can purchase 10-ticket discount books for $40. Other patrons pay $50. Edina does not have age-based discounts.

The discounts the MAFRC provides to seniors, juveniles, or the poor should be rebated with General Funds, according to the contracting-in agreement. 65

Identify Production Requirements. The capital expenditure requirements for the bubble are discussed above and shown in Table B.4. Table B.10 shows estimated costs to operate the bubble, assuming the bubble operates 15 hours a day, 7 days a week, 180 days a year, from November 1 to the end of April, and that it is used primarily as a golf driving range. (If the stadium opens for summer operations as it normally does, around the middle of April, the operating year may be 15 to 20 days shorter.)

Almost all operating costs in the table are deducted from estimates made by ASI, adjusted for local conditions and the MAFRC’s status as a city entity. Heating expenditures, included under utilities, are difficult to estimate and highly dependent on the number of hours of operation, severity of the winter, size of the bubble, and the temperature maintained by the bubble operators. We increased ASI’s estimated utility expenditures by $20,000 after talking with the operators of the Edina bubble. The city is self-insured, and legal and accounting are central service tasks, so both are included in overhead expenditures. 66 City and department overhead increases the total expenditures by 6 percent.

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65Discounts for seniors in Saint Paul may not be justified on equity grounds. Only 10.7 percent of Saint Paul seniors have incomes below the designated poverty level, while 10.9 percent of all Saint Paul residents are below the poverty level. Offering price cuts to the elderly may be unfair to the young, and it would cut out a potentially significant revenue source because the senior citizen market is increasing. For further discussion, see John L. Compton, “Senior Citizens Should Pay Full Price,” Journal of Park and Recreation Administration, March 1983.

66With self-insurance, the city would pay only if it lost a suit. Since this is possible, the city may wish to purchase a special policy that protects the users of the bubble.
### Table B.10

**MAFRC 1984 EXPENSES FOR WINTER OPERATION**

<table>
<thead>
<tr>
<th>Item</th>
<th>Expenses ($/year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Personnel</strong></td>
<td></td>
</tr>
<tr>
<td>1 Recreation Director III (general mgr.)</td>
<td>20,800</td>
</tr>
<tr>
<td>8 hrs/day @ $14.50/hr</td>
<td></td>
</tr>
<tr>
<td>2 Refectory attendants, 8 hrs/day @ $5.35/hr</td>
<td>15,408</td>
</tr>
<tr>
<td>2 Supervisor/pros*, 8 hrs/day @ $4.00/hr</td>
<td>11,502</td>
</tr>
<tr>
<td>1 Refectory helper, 3 hrs/day @ $3.50/hr</td>
<td>1,890</td>
</tr>
<tr>
<td>1 Park groundskeeper, 3 hrs/day @ $13.85/hr</td>
<td>6,939</td>
</tr>
<tr>
<td><strong>Total salaries</strong></td>
<td>56,637</td>
</tr>
<tr>
<td><strong>Benefits (28.4% of salary)</strong></td>
<td>16,087</td>
</tr>
<tr>
<td><strong>Labor to inflate and dismantle bubble</strong></td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Total labor</strong></td>
<td>82,724</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Utilities</strong></td>
<td>74,000</td>
</tr>
<tr>
<td><strong>Maintenance and repair</strong></td>
<td>3,000</td>
</tr>
<tr>
<td><strong>Maintain golf ball inventory</strong></td>
<td>4,700</td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>1,000</td>
</tr>
<tr>
<td><strong>Total other expenses</strong></td>
<td>82,700</td>
</tr>
<tr>
<td><strong>Total expenses</strong></td>
<td>165,424</td>
</tr>
<tr>
<td><strong>City and department overhead</strong></td>
<td>9,925</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>175,349</td>
</tr>
</tbody>
</table>

*Golf pros supervise the bubble and supplement their income with fees from golf lessons.*

In determining the Revenue Center's personnel costs, we assumed the city purchased (and included in capital costs) the latest automatic golf-ball return equipment, thereby eliminating the need for as many casual laborers as ASI recommended.\(^67\) We then converted the remaining recommended labor into the appropriate city personnel categories.

\(^67\)Personnel costs are higher for a publicly operated bubble than for a privately operated one, but a public bubble can still operate competitively because it pays no income taxes, and its capital expenditures are lower. In addition, the public bubble may be subject to less rigorous regulation (of concessionaires, for example), which could keep operating costs still lower.
Develop a Financial Plan. The financial data for the golf bubble were given earlier in this appendix. The MAFRC should rework the expenditure and revenue estimates in Table B.7 after examining the results of the market research study. Once the major programming decisions are made, the manufacturers can provide the final estimates of the bubble’s cost, and MAFRC managers can more accurately estimate its potential revenues.

4. Prepare the Steady-State Budget for the MAFRC

Estimate full costs. To account for the full costs of the services it offers, the MAFRC should use the procedures that have already been established for the treatment of fringe-benefits and support service costs by the city’s enterprise funds. These procedures should be used to assess charges to the General Fund or to the direct beneficiaries of the service. Providers of support service used by the Revenue Center in identifiable amounts should bill the MAFRC directly through the Internal Service Funds. The cost of support services used in relatively unidentifiable amounts by the Revenue Center should be allocated on the basis of policy established by the central administration. Some costs, including the appropriate shares of the relevant departmental and divisional overhead, could be prorated, based on the size of the MAFRC budget.

The MAFRC’s costs should also include depreciation for all capital assets used in the provision of private services. Depreciation must be paid by the Revenue Center into a fund available for Capital Improvements.

Identify own source revenues. The MAFRC has fees and charges but no earmarked funds (see Table B.2).

Review beneficiary charges. The services of the MAFRC should be inventoried, and a list of the public and private components of each service should be prepared to set beneficiary charges and write the contracting-in agreement with the central administration. The services currently offered by the municipal stadium are listed in Table B.3. New MAFRC programs and services should be added to this list.

A procedure for characterizing services and for deciding on the beneficiary charge fraction or the fraction of subsidy from the General Fund for particular services is given in Section II. Table B.11 presents hypothetical examples of how two MAFRC services might be scored using the procedure. This exercise suggests that the MAFRC ought to charge its users half the cost of using the stadium for high-school baseball, and 100 percent of the cost of the indoor driving range for adult clients.
<table>
<thead>
<tr>
<th>Service Question</th>
<th>Adult Use of the Golf Dome as a Driving Range</th>
<th>Use of the Stadium for High-School Baseball</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>C</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>D</td>
<td>15</td>
<td>0</td>
</tr>
<tr>
<td>E</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>F</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>G</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100</strong></td>
<td><strong>50</strong></td>
</tr>
</tbody>
</table>

**Table B.11**

**HYPOTHETICAL BENEFICIARY CHARGE SCORE FOR TWO MAFRC SERVICES**

Estimate the General Fund requirements. General Fund requirements will equal the full cost of operating the MAFRC less its revenues from charges for use of the facilities. General Fund requirements can be determined only after the public good component of each service is known.

5. Develop a Multiyear Financial Plan

These steps are outlined earlier in this appendix.

6. Draft the Revenue Center Charter

**Statement of services and General Fund support.** The contracting-in agreement specifies the public services the MAFRC must supply in exchange for General Fund revenues. It includes a monitoring mechanism that defines output measures and performance targets for public goods. It also includes specific provisions for ensuring that low-income individuals have access to the services. For example, the General Fund might provide a rebate that would permit the MAFRC to charge low-income groups less than the full cost of its services.

The charter must also include a discussion of every MAFRC service that has a public good component. For example, the checklist exercise in Table B.11 suggests that the MAFRC ought to receive from the
General Fund 50 percent of the cost of providing the stadium for high-school baseball. This service can be measured in solid, well-defined units—the number of high-school baseball games staged in the facility. The cost of the event is the average total cost of all events. Total costs to be charged to the General Fund should include lights, payroll, fringe benefits, administrative costs, and miscellaneous costs. They should not include depreciation on the stadium.  

The contracting-in agreement could be written in either of two ways:

- The General Fund would provide 50 percent of the cost of a set number of dates for high-school baseball (say, 30) or
- The General Fund would provide 50 percent of the cost of each high-school baseball game the MAFRC is able to book

If 50 percent of the cost of a high-school baseball game is paid by the General Fund, the other 50 percent must be collected in the form of direct charges to the high school. If MAFRC management is unable to recoup this amount, the city will have to reassess whether it should provide the service.

**Distribution of retained earnings.** The charter would specify how the MAFRC’s retained earnings would be treated. We estimated that the venture would produce retained earnings within five years, which could subsidize the summer operations. Before that time, the surplus revenues could be plowed back into the MAFRC to make certain that the venture gets off the ground.

A portion of the MAFRC’s retained earnings would eventually be paid back into the General Fund. The appropriate rate for the payback would depend upon the income potential of the MAFRC in relation to its expenditure base. Since retained earnings will probably be large in relation to total expenditures, it may be appropriate to funnel a considerable portion of the income into the General Fund.

A portion of the MAFRC’s retained earnings should also be returned to the workers who were primarily responsible for bringing them about. The exact form in which retained earnings would be returned to workers should be discussed and then included in the MAFRC charter.

The bulk of retained earnings should be kept for the use of the MAFRC itself. They could be used to purchase additional equipment (e.g., video golf bays), to build up working capital reserves, or as seed

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*See Section III for a discussion of why the General Fund should not be charged for depreciation.

*Retained earnings could actually be larger than those estimated, because we did not estimate the General Fund contribution to the MAFRC.
money with which to initiate new ventures. The MAFRC could lend its retained earnings to other Revenue Centers that need venture capital or, more likely, it could help support other Parks and Recreation activities, such as municipal athletics, which are directly related to MAFRC functions.

7. Submit the Charter for Review

Once the MAFRC charter is written, it must be submitted for review to the Director of Finance and Management, the Budget Director, and the City Council. When the charter is approved, the MAFRC can begin operation.