

PN-AIJ-583

**MODERNIZING FINANCIAL
MANAGEMENT FOR
HUNGARIAN LOCAL
GOVERNMENTS**

**SECOND YEAR SEMINAR:
NOVEMBER 5-6, 1997**

Prepared for



East European Regional Housing Sector Assistance Project
Project 180-0034
U.S. Agency for International Development, ENI/EEUD/UDH
Contract No. EPE-C-00-95-001100-00, RFS No. 6610-530

Prepared by

Ritu Nayyar-Stone
The Urban Institute
and
Andrea Tönkö
Metropolitan Research Institute
Budapest, Hungary



THE URBAN INSTITUTE
2100 M Street, NW
Washington, DC 20037
(202) 833-7200
www.urban.org

July 1998
UI Project 06610-530

TABLE OF CONTENTS

NOVEMBER 5, 1997	2
Panel Discussion: Budget Concept Preparation	2
Sources of Capital Budgeting	4
The Need for Capital Improvements Planning and Budgeting	5
Financing Alternatives and Municipal Debt Capacity	5
NOVEMBER 6, 1997	6
Training Session I: Financial Policy and Project Financing	6
Impact Analysis	6
Ranking, Rating Models and Organizational Issues of Decision-Making	7
Guest Speaker	7
Training Session II: Exercise on Prioritizing Capital Improvement Projects	8
Feedback: Local Government Plans for the 1998 Budget Document	8
ANNEX A: MODERNIAZING FINANCIAL MANAGEMENT FOR HUNGARIAN LOCAL GOVERNMENTS

MODERNIZING FINANCIAL MANAGEMENT FOR HUNGARIAN LOCAL GOVERNMENTS

SECOND YEAR SEMINAR: NOVEMBER 5-6, 1997

This report briefly describes the November seminar on Modernizing Financial Management for Hungarian Local Governments. The program aims at training Hungarian local government finance officers to improve budgeting and financial management within their cities. The November seminar was the fourth seminar of the second year program, which extends from June 1997 to March 1998.

The agenda, list of participants, and course material are included in Annex A. Twelve local governments attended the November seminar some from large cities like Debrecen and Székesfehérvár, but the majority from smaller towns. Table 1 shows the list of local governments who have attended the second year seminars so far.

NOVEMBER 5, 1997

Mr. József Hegedüs (Metropolitan Research Institute (MRI)) welcomed the participants to the seminar, then Ms. Ritu Nayyar-Stone (the Urban Institute (UI)) and Róbert Kovács (MRI) evaluated the homework assignments (from the September seminar) submitted by the participants.

Ms. Nayyar-Stone gave feedback on the performance measurement assignment returned by two participating local governments. One had chosen the city management sector, public sanitation sub-program, to develop strategic goals, different alternatives of achieving the goal, the criteria to select alternatives and finally various performance indicators. The second city had focused on the sub-program of road construction. Using the answers provided by the cities, Ms. Nayyar-Stone made suggestions which could clarify the cities goals and objectives to the citizens, and fine tune the performance indicators.

Mr. Róbert Kovács gave feedback on the forecasting assignment returned by the participants. After his presentation, the representative of Székesfehérvár said that this homework had not been a problem for them, since they had prepared the first homework in a similar structure. However, this homework helped them to rethink the financial management of their local government from a completely new perspective. Unfortunately, the return date for the homework had not synchronized with the deadline for the preparation of city's budget policy/concept, therefore some of the important elements of the policy had not been included in the returned homework.

Panel Discussion: Budget Concept Preparation

The panel comprised of Mr. József Kéri from Szolnok, Mrs. Krajsóczki from Szentes, and Mrs. Kürthy from Püspökladány.¹ The moderator was Mr. Hegedüs. The objective of the panel was to discuss the preparation and content of the local government annual budget concept, which is required by law by end November. The budget concept introduces policy makers and citizens to the economic condition of the municipality, and policies being considered by the local government for the next year's budget. Szolnok, Szentes and Püspökladány had previously used the budget concept to introduce council committee members and citizens to the process of budget reform being initiated by the city, and its use of a program budget for the next year. The panel specifically aimed at addressing the following questions:

- Can the procedures/concepts learnt at the training seminars be used and included in the budget policy?
- What considerations can sector representatives present to politicians at the city councils discussion of the budget concept?
- To what extent does the budget policy tie the hands of those preparing the budget?

Mr. Kéri presented the 1998 budget concept of Szolnok. He stated that the staff preparing the budget concept assume a large responsibility especially before elections—they must specify the “load-bearing capacity” of the city to politicians. Thus Szolnok's budget policy does not include any specific proposals, and presents only the limitations and facts that will have to be considered when preparing the budget. Using the colored graphs and charts in the budget policy document, committee members can analyze the changes in, and the internal structure of the credit portfolio and revenues of the city. The budget concept is therefore based on facts, and usually not subject to any argument. However, topics of conflict can be: (1) proposals to eliminate some activities in the city, and (2) financing, priorities, and feasibility considerations of planned capital investments for the fiscal year.

Mr. Hegedüs commented that the Szolnok budget policy fails to include guidelines about the load-bearing capacity of citizens, manageable debt burden and local tax policy.

Mrs. Krajsóczki remarked that the scheduling of this year's budgeting seminars are very much in line with the local governments' work in their cities. They can use concepts mentioned at the seminar, and homework exercises, when they prepare the budget for the

¹ All three individuals are head of the finance department in their respective jurisdiction.



city. They find group exercises specifically important, since they can learn about the experiences of other cities in relation to the specific problems discussed. The 1998 budget policy of Szentes will be presented to the city council before November 30. Legal regulations give flexibility to the content for the budget policy, therefore lessons learnt at the seminar can be fully used for budget preparation. The city of Szentes has the same view regarding the content of the budget policy as Szolnok. They do not want to present any data or proposals to council members in this phase either. They want to inform decision-makers only about facts and financial processes that characterize the city's financial management, as well as other internal structural relationships.

Mrs. Kürthy explained that Püspökladány had already prepared a program budget for secondary education and the communal sector in their 1998 budget. They want their 1999 budget to include program budgets for the social and health sectors. Mrs. Kürthy stated that her discussions and exchange of experiences with the experts from Szentes are extremely useful, and hopes to maintain that discussion in the future as well. Püspökladány anticipates that program budgeting will help them achieve financial stability in the sectors following a program budget format, and improve service quality.

Following the panel presentation the representative of Székesfehérvár agreed with Mr. Hegedüs's comment on the Szolnok budget policy, saying that the budget concept is too general. Székesfehérvár's budget concept also includes the demands for the given fiscal year. This enables reaching a consensus, and finalizing proposals for balancing the budget. In response, Mr. Kéri maintained his previous position, reemphasizing that it would not be useful to include strategic positions and principles in the budget concept, since the city has several hundred resolutions, that could be included in the budget concept. This would deprive the budget concept from its most important virtue—being concise.

Sources of Capital Budgeting

This presentation was made by Mr. Hegedüs. He stated that a capital budget defines the financial management of municipalities for several future years, and is different in that respect from other budgets. Capital budgeting is an important topic in the Modernizing Financial Management for Hungarian Local Governments program, and is closely associated with a number of important and useful concepts—cash-flow analysis, various capital market analyses, etc. The following issues were raised in Mr. Hegedüs's presentation:

- How does a capital budget fit into the overall capital investment policy of a municipality?

- Municipalities finance a small part of capital investment projects implemented. A larger part is financed by private firms, households and from the central budget. How can capital budgeting be linked to these other sources of funding? Can it influence them?
- Maintenance and operation are an important element of capital investments. It is a frequent problem that these areas are overlooked, which leads to a deterioration of assets and an unavoidable need of serious interventions later.

The following maintenance strategies are available to local governments:

- “Fire fighting”,
- Replacing critical elements,
- Overlapping capital investments with other projects, and
- A consistent strategy of replacement.

The relationship between the municipality and municipal institutions is especially important with regards to capital investment projects. Capital investment projects can be either short term, or long-term, with respect to the period for which funds have to be invested; and cost reducing, or cost increasing, with respect to operating costs. The central subsidy/transfer system can create certain distortions in capital investments. They are: (1) over investment, (2) building of excess capacity, and (3) neglection of local priorities.

The Need for Capital Improvements Planning and Budgeting

This presentation was made by Mr. Philip Rosenberg (consultant to UI). Mr. Rosenberg started his presentation by discussing the dilemmas of infrastructure investments. For example, should a local government renew or maintain an existing infrastructure system, or should it expand the system? Should the government undertake some spectacular or high public interest investment, or investment of same importance which is not as visible?

Mr. Rosenberg’s presentation was covered the following points:

- The importance of separating the capital budget and operating budget.
- Fundamental differences between capital budgeting and the traditional process of preparing capital investments.



- **Benefits of capital budgeting:**
 - Focuses on the needs and goals of the community
 - Facilitates budget preparation and a more favorable valuation of bonds
 - Sets rational priorities
 - Help co-ordination among programs
 - Strengthens the continuity of capital investments
 - Directs growth and stimulates economic development
 - Motivates to maintain existing infrastructure
 - Minimizes land acquisition costs
 - Improves co-operation between central and local governments and increases central transfers received

- The definition of capital goods varies by communities; it should be decided locally what items are worth including in the capital budget. According to Mr. Hegedüs, this issue is regulated by the Accounting Act, therefore local classifications do not make too much sense. The city of Debrecen also agreed that the size of the budget will determine which areas should be included in the capital budget. Debrecen has a budget of HUF 16 billion, therefore items included in their capital budget will be long-term large investments compared to a small city or a village. According to Mr. Hegedüs, a capital budget should cover everything that is specified by law.

- The process of capital improvements planning and budgeting involves: (1) a long range capital plan, (2) a capital improvements program, and (3) an annual capital budget.

Financing Alternatives and Municipal Debt Capacity

Mr. Richard Raphael from Fitch IBCA, Inc. New York, made this presentation. He stated that municipal bond issuance is a prosperous business in America with a turnover of USD 200 billion. This is a new perspective for American banks and municipalities, and has lead to the requirement of new procedures in bond issuance—credit rating, credit worthiness analysis, and major credit worthiness indicators.

There are generally four major rating factors in municipal ratings: (1) debt/capital, (2) economy, (3) financial operations and conditions, and (4) management. These factors are not viewed in isolation, but interrelate with each other to determine a rating. Some are within the municipalities control (financial and debt management, planning, and financial results) while in others the control is lacking (macro economic and financial policies of the central government, regional and local economies).

Positive operating profit, preparation of a long-term budget, and inclusion of control tools are important factors of credit worthiness. Creditors are usually interested in a municipalities' overall economic outlook, the composition of their assets and capital incomes, and the status of assets and items of property, since these factors influence a municipality's present and future ability to pay. Previously in America, only financially troubled municipalities use to prepare several-year forecasts about their financial management. Currently, however, more and more municipalities tend to prepare forecasts in order to create or maintain creditworthiness. A creditor (bond-holder) considers the following instruments as guarantee?

- General obligation bonds
- Special taxes
- Revenue bonds

Property tax is perhaps the most secure, predictable, and—due to the possibility of lien—easy-to-enforce revenue for municipalities.

Finally, Mr. Raphael illustrated the concepts in his presentation through an example of credit worthiness analysis for New York city.

Mr. Raphael's presentation generated the following remarks and questions. Mr. Hegedüs remarked that banks in Hungary are not interested in the status of infrastructure (e.g., roads) belonging to a municipality. Inquiries about such issues may seem strange to municipalities here. Mr. Raphael explained that roads in bad repair may lead municipalities into a very difficult situation—forcing them to borrow. This is why the status of roads (or other infrastructure) must be taken into consideration for a credit worthiness analysis. Ms. Nayyar-Stone questioned the application of credit worthiness to very small communities who may lack adequate coverage for taking out loans. Mr. Raphael explained that borrowing small communities tend to join their efforts and create the necessary coverage together, to finance the implementation of programs that serve common goals or interests.

NOVEMBER 6, 1997

The second day of the seminar started with a case study.

Training Session I: Financial Policy and Project Financing

Mr. Hegedüs explained the practical exercise, then participants broke up into three groups to work on the case study. There were two parts to the exercise: (1) establishing guidelines about loans, local taxes and user fees for a hypothetical "Average City" to



undertake necessary capital investment. (2) identifying financial resources to carry out investment and considering best alternatives based on the guidelines decided in part one of the exercise. The exercise was evaluated by Mr. Hegedüs and Mr. Kovács.

Impact Analysis

The exercise was followed by Mr. Mihály Lados's (Hungarian local trainer) presentation on Impact Analysis—Techniques for Capital Investments. A continuous cost-benefit evaluation of capital investments is essential in the phase of preparation, course of implementation, and completion of the project. The positive and negative impacts of the investment on other areas should also be analyzed. Mr. Lados used the example of industrial parks to illustrate a cost-benefit analysis, and asked the participants what costs and benefits could be incurred by a municipality when embarking on such a project. The responses were as follows:

Costs: (1) waiving the business tax, (2) offering the land free of charge, and (3) infrastructure development on the land. Benefits: (1) financial aids and income supplement allowances saved, (2) business taxes (3) the part of PIT that remains with the municipality, (4) increase in value to some assets and (5) possibly building tax. Mr. Hegedüs also remarked that as an indirect benefit, demand with ability to pay will increase, consumption will grow and retail trading will be stimulated. Mr. Lados then concluded his presentation with the "Amoeba Industrial Park Program" case study.

Ranking, Rating Models and Organizational Issues of Decision-Making

This presentation was made by Ms. Katalin Pallai (Hungarian Local Trainer). One of the most effective tool of decision-making on investments is the decision-matrix especially applicable to prioritizing projects competing with each other. However a decision-matrix has its limits because although it is an excellent preparatory tool for decision-making, decisions themselves are made by politicians. When compiling a decision-matrix, one should use the following criteria:

- Financial impacts
- Impacts on sector policy
- Economic impact
- Environmental impact
- Ability to plan
- Distribution impacts
- Consequences of delay
- Links to other interventions
- Political price/benefit

Scores are then given to each project for each criteria.

Guest Speaker

The guest speaker was Mr. Péter Szegvári from the National Regional Development Council. Mr. Szegvári explained that members of the County Development Councils are not elected officials, rather they are delegated by: (1) municipalities, (2) economic chambers, (3) the central government, (4) employers, and (5) employees.

The most important task of this Council is to adopt county-level development concepts and implement them among municipalities. In the course of that activity, Councils are authorized to distribute 7-8 percent of the central development funds at their discretion, and give priority to grant applications that contain a commitment by municipalities to use some of their own funds as well. At a national average, the HUF 9 billion distributed last year covered 70 percent of the projects, while the remaining 30 percent was financed by municipalities from their own resources.

This year HUF 8 billion of the total HUF 15 billion available to County Development Councils was earmarked for disadvantaged regions. In 1998, the National Regional Development Concept will be prepared, and, as a result, funds will be distributed under a long-term strategy and in line with priorities set under that strategy. The Hungarian Development Bank has operated from January 1, 1997, and focuses mainly on creating funds for regional development programs, in two areas:

- The bank facilitates the influx of venture capital for municipal undertakings.
- It makes long-term loans at favorable conditions to municipalities, which therefore do not have to take out commercial loans.

In order to submit successful loan applications, municipalities will have to focus on two things:

- Thinking in terms of the region, and intense co-operation within the region.
- Developing detailed programs (business plan, etc.).

As of next year, municipalities can make grant applications for 3-5 year projects, and the requirement about restricting the project to the same fiscal year will be abolished.

Training Session II: Exercise on Prioritizing Capital Improvement Projects



This exercise was conducted and evaluated by Ms. Pallai. Participants were required to fill in a decision matrix which would help them prioritize different capital improvement projects for a hypothetical city.

Feedback: Local Government Plans for the 1998 Budget Document

The moderator for this session was Mr. Hegedüs, and the objective was to get the participants feedback regarding the usefulness of the training seminars and the extent to which lessons learnt at the seminar would be incorporated into their 1998 budget.

The opinions of *Szolnok*, *Szentes*, and *Püspökladány* regarding the usefulness of the seminars and plans for the 1998 budget had been presented the previous day during the panel discussion on the budget concept. They had nothing new to add.

Representatives from *Szegvár* stated that their participation in the program had been extremely useful. Their budget concept for the 1998 budget incorporates only a few new elements about the social sector—examining revenue alternatives and decreasing expenditures. Their objective was to prepare a program budget for the social sector with the help of *Szentes* for 1999.

The representatives of *Csongrád* were particularly interested in the presentation on capital budgeting, since the city plans to launch substantial capital investments next year. The city also planned on preparing a program budget for education for 1999.

Nagykőrös stated that they have prepared a program budget for the educational sector based on examples learned at the USAID training seminars. Their budget concept has also been prepared in a style similar to *Szolnok*'s. Other new elements in the 1998 budget would be standardization of the planning process, and a more transparent budget.

Orosháza stated that they have also prepared a budget concept that is similar in content to that of *Szolnok*. At present, road construction and waste water treatment are the most important capital investments, and the city plans to implement these projects based on a capital budget. The 1998 budget will present the city management sector as a program budget. The city also intends to use the various impact analysis techniques learned at the training seminar in evaluating the possible renewal of some of the municipal institution buildings.

The representatives of *Nagykanizsa* said that education has undergone a substantial change in their city in the past couple of years, resulting in greater efficiency and quality of educational institutions. *Nagykanizsa* has revised the number of staff in this sector and reallocated funds based on a sector analysis. The system of city management has ample room for improvement, and the city will use lessons learnt at the training

seminars when improving that system. They will prepare the 1999 budget for the social sector as a program budget. As far as capital investment is concerned, the city has undertaken too much compared to its "load-bearing capacity" in the past few years, therefore does not intend to embark on any major investment projects in the coming years.

Székesfehérvár's budget for 1998 will not present any sector as a program budget. However, several financial management techniques learned at the training seminars will be incorporated in their budget: (1) presentation and consideration of several revenue alternatives so as to balance their budget, (2) detailed analysis of changes in the structure of expenditures, and (3) proposals for possible government interventions in critical issues. The city also considers it an important achievement that forecasts have been included in the budget concept.

The representative from District 6 of *Budapest* had mixed feelings about concepts presented at the training seminar. On one hand, he was envious of cities for their independence and autonomy in preparing their budgets. On the other hand, he was satisfied to a certain extent that District 6 does not have to face certain problems particular to cities. Characteristically, finance people are usually not sensitive to the problems of the social and health sectors: they do not take the trouble to get familiar with the internal peculiarities of the sectors, and exclude sectors from the decision-making processes. A benefit of the training program was to enable sector heads and officials to defend their arguments in a more spectacular and efficient way, and to better represent their interests against financial managers.



Table 1
List of Cities Participating in the Second Year (1997-1998) Seminars on Modernizing Financial Management for Hungarian Local Governments

No.	Cities	Population	May 14-15, 1997	June 18-19, 1997	September 24-25, 1997	November 14-15, 1997
1.	Budapest District VI	23,246	✓		✓	✓
2.	Csongrád	19,112	✓	✓	✓	✓
3.	Debrecen	210,143	✓	✓	✓	✓
4.	Eger	61,400	✓		✓	
5.	Gödöllő	29,761	✓	✓	✓	
6.	Hajdúszoboszló	23,387	✓	✓	✓	✓
7.	Hódmezővásárhely	49,901	✓		✓	
8.	Karcag	22,637	✓			
9.	Kazincbarcika	34,759	✓	✓	✓	
10.	Kecskemét	105,058	✓	✓	✓	
11.	Nagykanizsa	53,353	✓	✓	✓	✓
12.	Nagykőrös	26,646		✓	✓	✓
13.	Orosháza	34,600		✓	✓	✓
14.	Püspökladány	17,000	✓	✓	✓	✓
15.	Szegvár	5,285	✓	✓	✓	✓
16.	Székesfehérvár	107,181	✓	✓	✓	✓
17.	Szentes	33,000	✓	✓	✓	✓
18.	Szolnok	81,500	✓	✓	✓	✓

ANNEX A
MODERNIZING FINANCIAL MANAGEMENT
FOR HUNGARIAN LOCAL GOVERNMENTS

United States Agency for International Development
**MODERNIZING FINANCIAL MANAGEMENT FOR
HUNGARIAN LOCAL GOVERNMENTS**

*Hotel Rubin, 1118 Budapest, Dayka Gábor u. 3
November 5-6, 1997*

TABLE OF CONTENTS

Agenda

List of Participants

A. Transparencies

A.1 Homework Feedback on Performance Measurement

A.2 Sources for Capital Budgeting

A.3 The Need for Capital Improvements Planning and Budgeting

A.4 Financing Alternatives and Municipal Debt Capacity

A.5 Impact Analysis

A.6 Ranking, Rating Models, and Organizational Issues of Decision-Making

B. Exercises and Worksheets

B.1 Financing Alternatives

C. Background Reading

C.1 "Capital Budgeting and Project Evaluation" by John L. Mikesell

C.2 "Negotiating Skills for Budget Officers" by Mike Bestor

C.3 "Description of the Financial Planning Model" by Róbert Kovács

C.4 "Impact Analysis" by Mihály Lados

C.5 "Financing Alternatives" by András Vigvári

C.6 "Local Government General Obligation Rating Guidelines" by Fitch Research

C.7 "Water and Wastewater Revenue Bond Rating Guidelines" by Fitch Research

C.8 "Guide to Setting Priorities" by P. Harry Hatry, Annie P. Millar and George E. Peterson

C.9 "The Decision Matrix" by Katalin Pallai

AGENDA

Agenda
MODERNIZING FINANCIAL MANAGEMENT
FOR HUNGARIAN LOCAL GOVERNMENTS
November 5-6, 1997, Budapest
Hotel Rubin, 1118 Budapest, Dayka Gábor u. 3

November 5, 1997

- 9.30 - 10.00 a.m. Registration
- 10.00 - 11.00 a.m. Review of Homework
Róbert Kovacs, Városkutatás
Ritu Nayyar-Stone, Urban Institute
- 11.00 - 12.00 noon Panel Discussion: Budget Concept Preparation
József Keri, Szolnok
Ferencné Kürthy, Püspökladány
Sándorné Krajsószky, Szentes
Moderator: József Hegedüs, Városkutatás
- 12.00 - 12.15 p.m. Coffee break
- 12.15 - 1.15 p.m. Sources for Capital Budgeting
József Hegedüs, Városkutatás
- 1.15 - 2.15 p.m. Hosted Luncheon
- 2.15 - 3.15 p.m. The Need for Capital Improvements Planning and Budgeting
Philip Rosenberg, The Urban Institute
- 3.15 - 4.15 p.m. Financing Alternatives and Municipal Debt Capacity
Richard Raphael, Fitch Investor Services
- 4.15 - 4.30 p.m. Coffee Break
- 4.30 - 5.00 p.m. Exercise: Financial Policy and Project Financing

November 6, 1997

- 9.00 - 10.00 a.m. Exercise: Financial Policy and Project Financing (continued)
- 10.00 - 10.15 a.m. Coffee break
- 10.15 - 11.00 a.m. Impact Analysis
Mihály Lados, Hungarian Academy of Sciences, Center for Regional Studies
- 11.00 - 12.00 noon Ranking, Rating Models and Organizational Issues of Decision-Making
Katalin Pallai, City Government of Budapest
- 12.00 - 1.00 p.m. Guest Speaker
Peter Szegvári, National Regional Development Council
- 1.00 - 2.00 p.m. Hosted Luncheon

2.00 - 3.00 p.m.

Exercise: Prioritizing Capital Improvement Projects
Group Presentation and Critique
Katalin Pallai, City Government of Budapest

3.00 - 4.00 p.m.

Feedback from Participants
Local Government Plans for the 1998 Budget
Moderator: József Hegedüs, Városkutatás

LIST OF PARTICIPANTS

Municipalities

- | | |
|--|--|
| 1. Mrs Kotsis
finance staff
Mayor's Office VI district | 2 Lajos Germán
office manager
Mayor's Office VI district |
| 3. Tamás J Kiss
educational staff
Mayor's Office VI. district | 4 Dr. Marián Miklós
council member, alderman
Mayor's Office VI. district |
| 5. Ferenc Lázi
council member, head of the finance committee
Mayor's Office VI. district | 6 Éva Horinka
Mayor's Office, VI. district |
| 7. Istvánné Gál
budget group leader
Mayor's Office, Debrecen | 8 Istvánné Szepesi
group leader
Mayor's Office, Csongrád |
| 9. Bardy Beatrix
Mayor's Office, Csongrád | 10. Dr. Györgyné Heltai
office manager
Mayor's Office, Godöllő |
| 11. István Tengelits
office manager
Mayor's Office, Godöllő | 12. László Lőrincz
finance office manager
Mayor's Office, Hajdúszoboszló |
| 13. Imre Varga
educational office manager
Mayor's Office, Hajdúszoboszló | 14 Edina Kérdő
trainee
Mayor's Office, Hódmezővásárhely |
| 15. dr. Gabriella Dávid Tóthné
educational staff
Mayor's Office, Hódmezővásárhely | 16. Jánosné Lajtos
group leader
Mayor's Office, Karcag |
| 17. Julianna Hodos Vinczéné
secretary
Mayor's Office, Karcag | 18. Mrs. Gátszegi Gertrúd Gorontay
finance officer
Mayor's Office, Nagykanizsa |
| 19. Mrs. Mária Szányiné Kovács
finance officer
Mayor's Office, Nagykanizsa | 20 Ferencné Holló
finance staff
Mayor's Office, Nagykőrös |
| 21. Mrs. Tóth Éva Péczeli
finance staff
Mayor's Office, Nagykőrös | 34 József Mészai
Mayor's Office, Orosháza |
| 33 Mrs. Haklik
Head of Financial Department
Mayor's Office, Orosháza | 24 István Maté
Mayor's Office, Orosháza |
| 25 Mrs Gyomber
administration group leader
Mayor's Office, Szegvár | 26 dr. Mária Tasnadine Galambos
budget office manager
Mayor's Office, Székesfehérvár |
| 27 Varga Sándor | 28 Lipták János |

manager, city management
Mayor's Office, Szentes

manager, technical department
Mayor's Office, Szentes

29. Mrs Mária Lencséné Szalontai
manager, social policy department
Mayor's Office, Szentes

30. Gál Antal
manager, Family Help Center
Mayor's Office, Szentes

31. Ibolya Végh
notary
Mayor's Office, Szegvár

32. Imre Balogh
Mayors Office, Szegvár

Advisors

33. Marilynne B. Davis
advisor, city management
The Urban Institute, Budapest

34. Richard J. Raphael
Fitch Investor Service, LP

35. Ritu Nayyar-Stone
advisor, municipal finance
The Urban Institute, USA

36. Philip Rosenberg
advisor, municipal finance
The Urban Institute, USA

37. Margaret M. Tabler
advisor, municipal finance
The Urban Institute, Budapest

38. Katharine Mark
advisor, municipal finance
The Urban Institute, Budapest

39. Barati Izabella

The Urban Institute, Budapest

40. Dr. Charles Z. Jókay
Director
The Urban Institute, Budapest

41. Kéri József
manager, finance department
Mayor's Office, Szolnok

42. Péter László

Mayor's Office, Szolnok

43. Mrs Erzsébet Krajovszki
group leader
Mayor's Office, Szentes

44. Mrs Kürthy
manager, municipal finance management
Mayor's Office, Puspokladány

45. Mihály Lados
research fellow
MTA RKK, Györi Regionális Kutató, Győr

46. Katalin Pallai
advisor
Mayor's Office, Budapest

47. József Hegedus
advisor, municipalities
Metropolitan Research Institute

48. István Menyhárt

Mayor's Office, Szolnok

49. Andrea Deák
assistant
ICMA, Debrecen

50. Péter Szegvári

Ministry of Environment Protection and Urban
Development

51. Róbert Kovacs
fellow
Metropolitan Research Institute

52. Andrea Tonkó
fellow
Metropolitan Research Institute

53. Zsolt Pataki
fellow
Metropolitan Research Institute

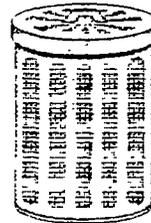
TRANSPARENCIES

Homework Feedback on Performance Measurement

CITY A

PROGRAM: *City Management*

SUB-PROGRAM: *Public Sanitation*



GOAL OF SUB-PROGRAM: *Improving the general feeling of the population and motivating people to be more concerned about cleanliness by maintaining a proper level of cleanliness of the roads, sidewalks and squares in the city.*

[Suggestion: Residents will have access to a higher level of cleanliness of roads, sidewalks and squares of the city, which will improve their satisfaction with this service.]

CITY A

SUB-PROGRAM OBJECTIVE: [Suggestion: By the end of fiscal year 1998, 90 percent of the citizens will be satisfied with the level of public sanitation/cleanliness.]

DIFFERENT ALTERNATIVES OF ACHIEVING THE GOAL:

- 1. Increasing the scope of service provision.*
- 2. Motivate citizens to do participate by providing a good quality of service.*
- 3. Provide adequate funds for the task to be performed.*
- 4. Effect the management structure of the organization performing the task.*

CITY A

THE CRITERIA TO SELECT ALTERNATIVES:

- 1. Extent to which the municipality can influence the organization performing the task.*
- 2. Complying with the objectives of employment policy of the city by employing local employees.*
- 3. Complying with environmental regulations.*

THE PROPOSED ALTERNATIVE: *Having the function performed by a contractor which undertakes the achievement of the goal considering the above criteria.*

PERFORMANCE INDICATORS: INPUT MEASURES:

- 1. The number of employees and the wage cost.*
- 2. The cost of processing the waste collected in public areas.*

CITY A

OUTPUT MEASURES:

1. *The size of road surface cleaned in square meters.*
2. *The proportion of regularly cleaned public areas.*

OUTCOME MEASURES: [Suggestions]

1. Percent of streets rated acceptably clean
2. Percent of scheduled collections missed.
3. Average customer satisfaction rating.

EFFICIENCY MEASURES:

1. *Cost per one square meter of cleaned area.*
2. *Costs per one square meter of collected waste.*
4. Cost per customer served.
5. Tons of solid waste collected per employee.

CITY B

PROGRAM: City Management

SUB-PROGRAM: *Road Construction*



STRATEGIC GOAL: *Road construction is needed for high heavy trucks over 3.2 meters, since the existing limit of the railway bridge is too low for them.*

[Suggestion: To provide safe and well maintained roads at minimum cost to the citizens.]

SUB-PROGRAM OBJECTIVE: [Suggestion: By the end of fiscal year 1999 construct x kms of road for heavy trucks over 3.2 meters.]

CITY B

DIFFERENT ALTERNATIVES OF ACHIEVING THE GOAL:

1. *Own resources*
2. *Applications*
3. *Entrepreneurs*
4. *Concession investment.*

[Suggestions: 1. Contract out the road construction.
2. Public -Private cooperation
3. Public financing and construction.]

CRITERIA TO SELECT ALTERNATIVES:

1. Increase in employment
2. Least costly alternative

CITY B

PERFORMANCE MEASURES: INPUT MEASURES

1. *Cost per linear meter*
2. *Cost per kilometer*
3. *Material cost*

OUTPUT MEASURES

1. *The length of road constructed.*

OUTCOME MEASURES:

1. *Increase in road capacity.*
2. *100 % of target achieved.*
3. *% of high trucks vs. other vehicles served by the new road.*

EFFICIENCY MEASURES:

1. *Input-output ratio.*
2. *The number of miles constructed in a satisfactory manner by road category.*

Capital Budgeting

Planning and Implementing
Budgets of Investments,
Improvements and Large
Renewals

1

The Place of the Capital Budget in the Program

- Strategic planning
- Financial indicators, forecasting
- Sector analysis
- Performance measures
- *Capital budget: plan to invest in great-value, longer term physical assets, assess and finance needs*

2

1

Objectives of the Two-day Program

- The importance of capital budgeting
- Municipalities and local capital investments
- Assessing needs
- Financial benefits and costs
- Alternatives of financing -- **financial plan**
- Options -- **decision making matrix**

3

Municipalities and Capital Investments

- **The majority of capital investments are not within the responsibility of a municipalities**
 - Central (roads, etc.)
 - Businesses (shopping malls etc.)
 - Household sector (housing investments etc.)
- **Conclusion: capital budgeting should be based on strategic plan of municipality**

4

Managing Capital and Capital Investment

- Management strategies
- Institutional setups - economic analyses

Types of Investments

- Term of investment of municipal resources
 - Short term (land and housing, re-selling)
 - Long term (schools, roads etc.)
- Implications for operation costs
 - Reduce (e.g. modernizing street lighting)
 - Increase -- financed by the central budget (eg. elderly home)
 - Increase -- financed by the local budget (eg. swimming pool)

Financial Impacts of Capital Investments

	Capital Costs	Operation
Center		
Municipality		
Business		
Users		

Issues of Municipal Improvements

- Financing and “distortions”: impacts of the central subsidy system
 - Over-investment (under-maintenance)
 - Encourage building oversized capacities
 - Local priorities are neglected

Pay-as-you-go

- **Benefits**
 - Costs of borrowing
 - Savings
 - Accountability
 - Costs are not born by the next generation
- **Disadvantages**
 - The current generation pays
 - Distorts the behavior of service providers
 - Great fluctuation in costs

9

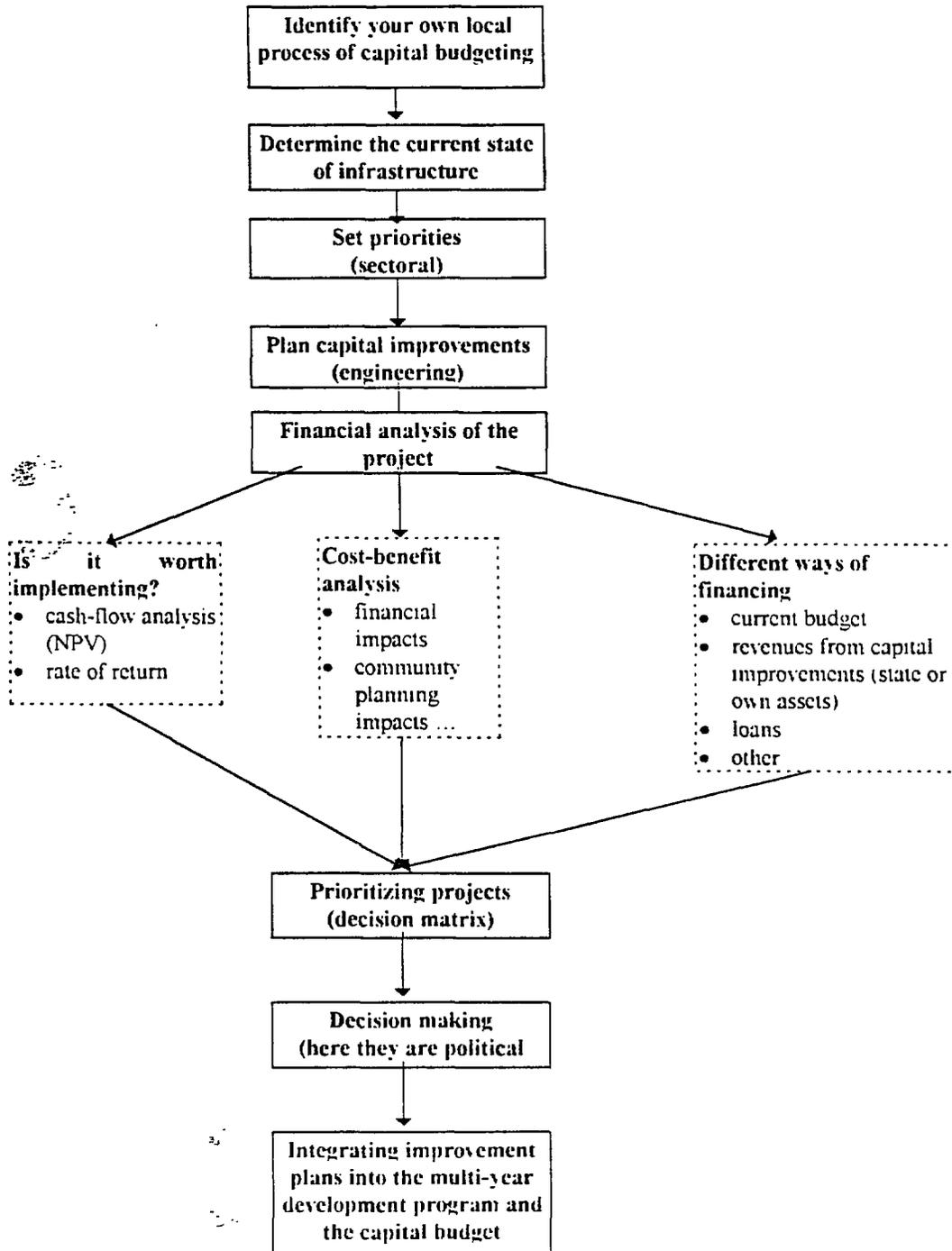
Pay you use

- **Benefits**
 - The current generation pays
 - Distorts the behavior of service providers
 - Great fluctuation in costs
- **Disadvantages**
 - Costs of borrowing
 - Savings
 - Accountability
 - Costs are not born by the next generation

10

5

The Capital Budgeting Process



WHY HAVE A SEPARATE CAPITAL BUDGET?

- IMPROVES EFFICIENCY AND EQUITY
- STABILIZES TAXES AND THE BUDGET
- IMPACT
- FINANCING SPANS FISCAL YEAR
- FOCUSES ATTENTION ON LARGE, EXPENSIVE PROJECTS

WHAT MAKES CAPITAL IMPROVEMENTS PLANNING & BUDGETING UNIQUE

- REQUIRES FISCAL PLANNING
- NONRECURRENT
- EXPENSIVE
- FOCUS ON PROJECTS, NOT ORGANIZATIONAL UNITS
- FINANCING SPANS FISCAL YEARS

WHAT MAKES CAPITAL IMPROVEMENTS PLANNING & BUDGETING UNIQUE

- ASSET “FIXED” IN PLACE
- RELATED TO OTHER GOVERNMENT FUNCTIONS
- RESULTS IN CAPITAL ASSETS THAT HAVE A LONG LIFE

BENEFITS OF CIPB

- FOCUSES ON COMMUNITY NEEDS AND GOALS
- PROMOTES FISCAL PLANNING AND IMPROVED OPPORTUNITIES FOR LOANS
- ESTABLISHES PRIORITIES RATIONALLY

BENEFITS OF CIPB

- FOSTERS PROJECT COORDINATION
- ENHANCES CAPITAL INVESTMENT CONTINUITY
- GUIDES GROWTH AND ENCOURAGES ECONOMIC DEVELOPMENT

BENEFITS OF CIPB

- FOCUSES ON MAINTENANCE OF THE EXISTING INFRASTRUCTURE
- ENHANCES INTERGOVERNMENTAL COOPERATION AND GRANT PARTICIPATION

RESULTS OF NOT PLANNING AND BUDGETING FOR CAPITAL IMPROVEMENTS

- IMPAIR ECONOMIC GROWTH
- HIGHER FUTURE COSTS
 - CAPITAL
 - OPERATING/MAINTENANCE COSTS
- BREAKDOWN IN SERVICES
- IMPAIR OVERALL QUALITY OF LIFE

ELEMENTS OF THE CIPB PROCESS

- A LONG-RANGE CAPITAL PLAN
- A CAPITAL IMPROVEMENTS PROGRAM
- AN ANNUAL CAPITAL BUDGET

CAPITAL IMPROVEMENTS PLAN

- A LONG-TERM PLAN
- COMMUNITY GOALS AND OBJECTIVES
- PLANNING CONCERNS
 - LAND USE
 - GROWTH MANAGEMENT
 - COMMUNITY REVITALIZATION

CAPITAL IMPROVEMENTS PLAN

- FISCAL CONCERNS
 - PRESENT AND FUTURE FISCAL CAPACITY
- ENGINEERING CONCERNS
 - DESIGN

CAPITAL IMPROVEMENTS PROGRAM

- A FIVE OR SIX YEAR PROGRAM THAT INCLUDES:
 - LIST OF PROPOSED CAPITAL PROJECTS
 - FUNDING PRIORITIES
 - YEAR PROJECT WILL BE INITIATED
 - ANNUAL EXPENDITURES
 - FINANCING METHOD

CAPITAL BUDGET

- FIRST YEAR OF CIP
- PRESENTS FINANCING MECHANISM
 - TYPICALLY REQUIRES BONDS, LOANS OR SUBSIDIES
- CENTERS ON PROJECTS, NOT AGENCIES
- LASTS LONGER THAN A FISCAL YEAR
- USUALLY DONE THROUGH CONTRACTS

CAPITAL ASSETS INVENTORY

- IDENTIFIES
 - CAPITAL ITEMS
 - ACQUISITION DATES
 - ACQUISITION COSTS
 - RESPONSIBLE DEPARTMENTS

CAPITAL ASSETS INVENTORY

- OPTIONS
 - IDENTIFY CONDITIONS AND REPAIR HISTORY
 - MAINTENANCE MANAGEMENT SCHEDULE
- BENEFITS
 - KNOW WHAT IS
 - PREDICT FUTURE NEEDS
 - HELPS MAKE REPAIR/REPLACE DECISIONS

BEST AVAILABLE COPY

CAPITAL PROJECT REQUEST

DEPT. AND ACTIVITY _____ DATE PREPARED _____

SUBMITTED BY _____ PHONE NUMBER _____

1. PROJECT TITLE AND REFERENCE NO. _____ 2. PURPOSE: New _____ Modify _____
Delete _____ Other _____

3. DEPARTMENT PRIORITY _____

5. RELATION TO OTHER PLANS _____

4. LOCATION _____

6. DESCRIPTION: _____

7. JUSTIFICATION AND ALTERNATIVES CONSIDERED: _____

8. COST BY YEAR

Budget Fiscal Year:	TOTAL *
Budget Year F.Y. _____	_____
Program Year F.Y. _____	_____
Program Year F.Y. _____	_____
Program Year F.Y. _____	_____
Program Year F.Y. _____	_____
Program Year F.Y. _____	_____
TOTAL SIX YEARS _____	_____
After Sixth Year _____	_____

* Interest cost not included.

9. PROPOSED METHOD OF FINANCING _____

10. TOTAL ESTIMATED CAPITAL COSTS

Planning, design, engineering _____
Land purchase _____
Construction _____
Miscellaneous _____
Other _____
TOTAL CAPITAL COST _____

11. NET EFFECTS ON MUNICIPAL REVENUE (+ or -)

Taxes _____
Other income _____
Subtotal () _____
Gain from sale of replaced assets _____
TOTAL _____

12. FUTURE ESTIMATED RECURRING COSTS

Annual Operating Cost _____
Annual Maintenance Cost _____
Other Non-Capital Cost _____
TOTAL RECURRING COST _____

13. CURRENT STATUS

Preliminary Design _____	PRR 200
Final Plans & Specifications _____	
Construction _____	

14. PRIORITY (Reserved) _____

15. COMMENTS (Reserved) _____

FORM FOR CALCULATING BENEFIT-COST RATIOS

• Benefits

Value of water saved -- system _____ / year

Value of water saved -- customer _____

Value of deferred construction of new supply works _____

Value of property damage prevention _____

Value of reduced legal fees and court costs _____

Value of improved meter reading _____

Value of improved public relations _____

Value of savings in leak repair crew time _____

Value of reduction in time-of-day power charges _____

Grand Total Benefits (A) _____

FORM FOR CALCULATING BENEFIT-COST RATIOS (2)

- Costs

Labor and equipment costs _____/year

Leak repair costs _____

Grand Total Costs (B) _____/year

Benefit/Cost Ratio A/B = _____

42

Rating Factors in Credit Analysis

Richard J. Raphael
Fitch Investor Service. L P.



Major Credit Factors

- Debt/capital
- Economy
- Financial Operations
- Management

BEST AVAILABLE COPY

Economy

- What is the economy based around
- Particular strengths of a community
- Diversity - Employment and Taxpayers
- Trends and outlook
- Cyclicity
- Wealth and Income

How will the Debt be Repaid

- How debt service will be funded?
 - Projects that generate additional resources
 - Projects that have a neutral impact
 - Projects that increase operating costs/subsidies
- Options
 - Raise Taxes
 - Existing excess revenues
 - Cut/restrain spending

Lender / Bondholder Security

Bondholder Security

- General Obligation
 - Full faith and credit
 - Secured by property tax pledge
 - Other possible revenues as security (Intergovernmental aid)

- Special Tax
 - Lien on specific tax only

- Revenue Bond
 - Separate Enterprise Fund-self sufficient
 - Lien on specific user charge revenue
 - Rate Covenants
 - Additional bond test
 - Debt service reserve

Debt / Capital Needs

- Security
- Debt Levels
- Condition of Infrastructure
- Capital Needs and Capital Plan

Debt Affordability Measurements

Typical principal amortization 15-20 years of annual payout, with 30 years not uncommon.

Average amortization- 25% in 5 years
50% in ten years

Debt service structure- Level, Declining, Increasing

Debt Ratios	Low	Moderate	High
Debts service/revenues	<5%	5-10%	10-%
Debt/Property base	<2%	2.0-7.0%	7-10-%
Debt/personal income	<5.0%	4-8%	+8%

Financial Operations

- Spending Requirements
- Revenues
- Consistent Operations
 - Absence of non-recurring resources
- Reasonable Fund Balance Level
- Budget - balanced
- Other

Financial Management

- Standardized Accounting - (GAAP)
- Sound capital Planning
- Budgeting
 - Budget versus Actual
 - Monitoring and controls
- Multi-year Forecast
- Tax / Spending limitations - (political & legal)
- Other

THE COSTS OF THE „AMÕBA” BUSINESS PARK

- *planning*
- *experts*
- *expenses on land*
- *preparation of the site*
- *cash to establish a management company*
- *support for the management company*
- *interest subsidy*
- *support for local enterprises*
- *installments*
- *interest*

THE BENEFITS OF „AMŐBA” BUSINESS PARK

- *profit from IP Ltd.*
- *interest support*
- *átadott pénzeszközök visszaadása (megtérülése)*
- *increase in equity*
- *estimated share tax (PIT)*
- *estimated normative grant*
- *megtakarított jövedelempótló támogatás*
- *estimated business tax*
- *estimated tax on buildings*
- *specific grants*

Table 2 Cost Benefit Analysis of "Amurba" Industrial Park (from the point of view of Sample City Municipalities)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Observation
Input (thousand \$/yr)	110000	210000	157500	37500	27200	32150	30000	30000	0	0	0	0	0	0	0	0	0	624650
Planning	5000	7000																12000
Interest fees	2000	3000																5000
Land purchase	-40000																	-40000
Land leveling	3000																	3000
Cash contribution for the foundation of IP Ltd	60000																	60000
Cash provision for IP Ltd ¹		200000	100000															300000
Job creation																		100000
Interest on loans																		-42650
Supporting local business ²																		50000
Transfers for the relocation firms																		
Total of 1992 prices I	148500	210000	138371	25974	14579	14125	7322	9153	0	0	0	0	0	0	0	0	0	0
Total of 1992 prices II	148500	210000	138371	25974	14579	14125	7641	10612	0	0	0	0	0	0	0	0	0	0
Transfers (thousand \$/yr)																		2376810
Transfers																		-49000
Partial payment of interests by IP Ltd ³																		10000
Repayment of loans ⁴																		50000
Increasing the equity of the Sample City of IP Ltd																		250000
Estimated shared IP	139	194	1796	1517	2489	4160	7487	8943	9395	11711	15844	19434	23681	26804	29684	32834	34885	232759
Estimated income grants	77	1106	2729	2179	3306	6065	11916	12363	13949	17198	23307	28647	35692	39790	43489	4855	52067	268766
Business income supplement benefits	0	0	7090	5568	8941	15288	31709	31780	46970	56070	72794	86147	101241	111360	120179	129334	133082	960154
Business tax revenues	193	155	2650	-125	1666	-468	-4246	8867	18810	31470	30252	35108	-47216	54155	56288	64264	71946	418202
Building tax revenues	0	0	-60	-320	-80	-300	-1350	1770	2970	6860	7260	8460	9260	14490	18990	18990	18990	105920
Total of 1992 prices I	552	103216	11596	10458	32118	119827	15913	19593	22677	23490	25859	25645	26189	24788	22532	18188	19732	
Total of 1992 prices II	552	103216	11596	10458	32118	119827	16636	22718	29265	38236	44331	50245	58641	63433	65898	59421	71937	
Balance I	147948	-106784	116975	-18516	17539	105703	8621	10442	22677	25490	25859	25645	26189	24788	22532	18198	19732	
Balance II	147948	106784	-116975	-15516	17539	105703	8995	12106	29765	38236	44331	50245	58641	63433	65898	59421	71937	
Inflation I ⁵	135.0	123.0	122.5	118.8	128.2	122.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	120.0	115.0	115.0
CPI 1996	74.1	100.0	122.5	145.5	186.6	227.6	273.1	327.8	393.3	472.0	566.4	679.7	815.6	978.7	1174.4	1350.6	1533.2	
Inflation II ⁶	135.0	121.0	122.5	118.8	128.2	122.0	115.0	108.0	106.0	105.0	105.0	105.0	105.0	105.0	105.0	105.0	103.0	103.0
CPI II 1996	74.1	100.0	122.5	145.5	186.6	227.6	261.8	282.7	299.7	311.6	330.4	346.9	364.2	382.4	401.6	413.6	426.0	

¹ Cash transfer to IP Ltd for building the infrastructure of Industrial Park (interest free loan), of which IP Ltd repaid 5 M in 1995

² The sample of IP Ltd was increased with the extent of the investments on 1996

³ In 1994 and 1995 IP Ltd repaid both of the due interests on 1-01

⁴ At the beginning of 1992 Sample City repaid the rest of the residential mortgage maturity. Therefore the interest due in 1996 decreased significantly

⁵ To ensure better food prices

⁶ All 1994 IP Ltd was not necessary, but the annual equity always kept as dividend in the firm. This decision is expected to be extended for five more years in 1996

⁷ At constant prices

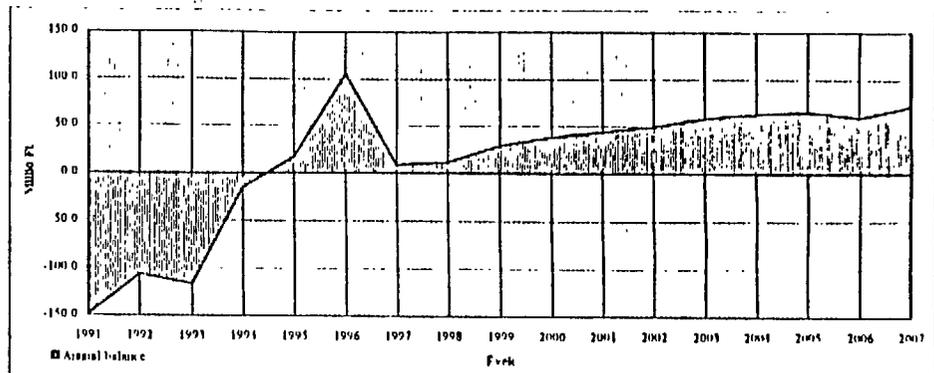
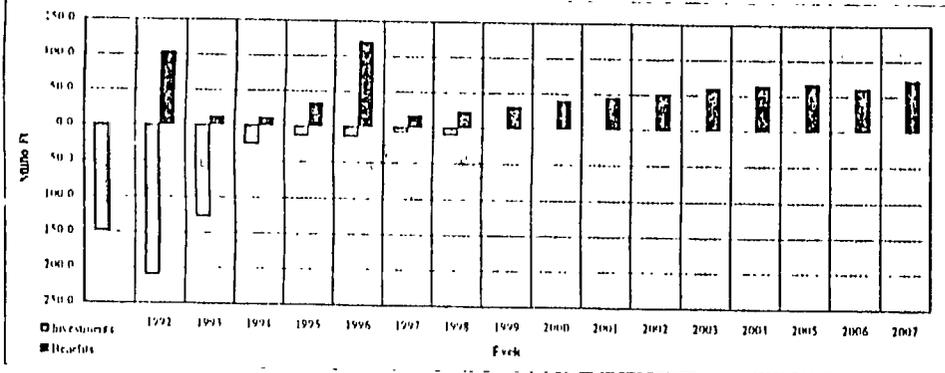
⁸ Inflation at 1992 prices assuming the "constant growth scenario" Inflation II - The "constant growth scenario" Source: Humphrey - Restructuring and long term growth - Country study by the World Bank - Washington D.C. September 1995

Source: Our calculations of IP Ltd and Sample City

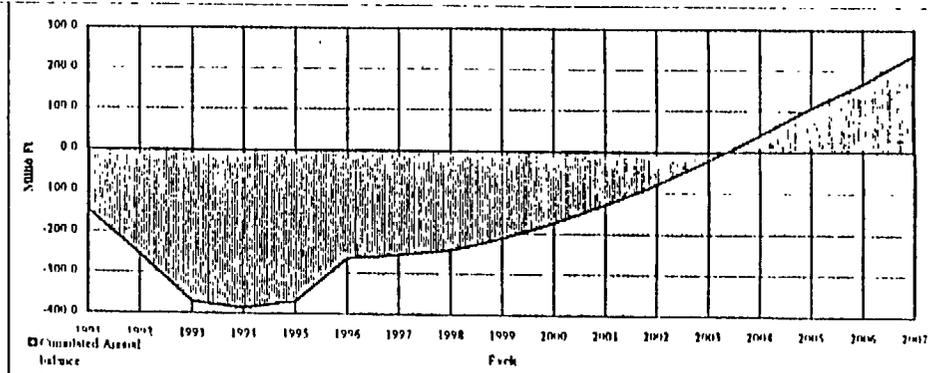
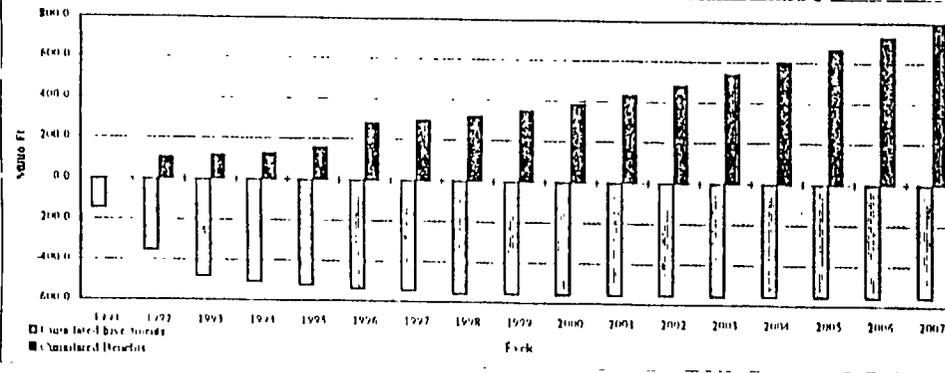
BEST AVAILABLE COPY

Figure 2 Cost benefit analysis of "Amôba" Industrial parc program Scenario I

Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Investments	-148.5	-210.0	-128.6	-26.0	-14.6	-14.1	-7.6	-10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benefits	0.6	103.2	11.6	10.5	32.1	119.8	16.6	22.7	29.8	38.2	41.3	50.2	58.6	63.4	65.9	59.4	71.9
Annual balance	-147.9	-106.8	-117.0	-15.5	17.5	105.7	9.0	12.1	29.8	38.2	44.3	50.2	58.6	63.4	65.9	59.4	71.9



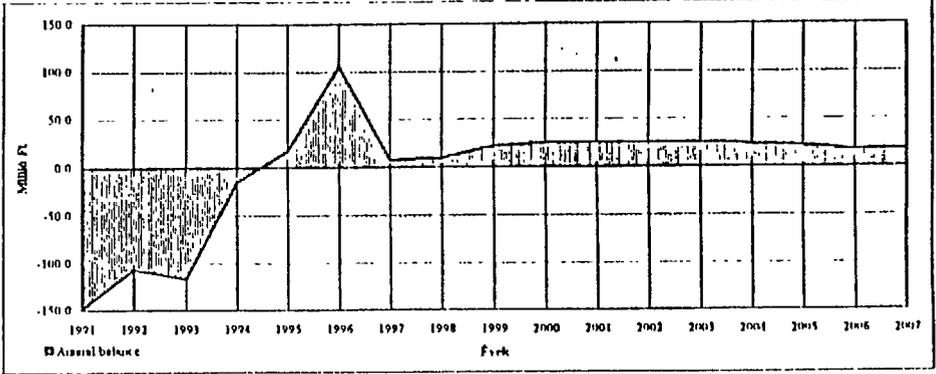
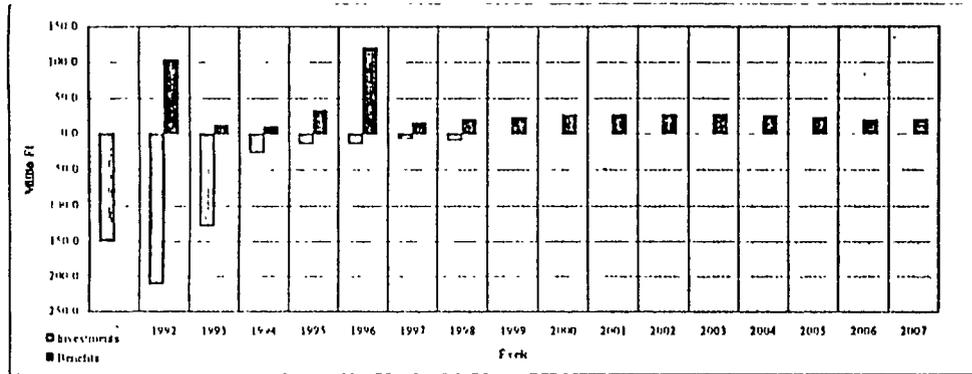
Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cumulated Investments	-148.5	-358.5	-487.1	-513.0	-527.6	-541.7	-549.4	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0
Cumulated Benefits	0.6	103.8	115.4	125.8	157.9	277.8	294.4	317.1	346.9	385.1	429.5	479.7	538.3	601.8	667.7	727.1	799.0
Cumulated Annual balance	-147.9	-254.7	-371.7	-387.2	-369.7	-266.0	-255.0	-242.9	-213.1	-174.9	-130.5	-80.3	-21.7	41.8	107.7	167.1	239.0



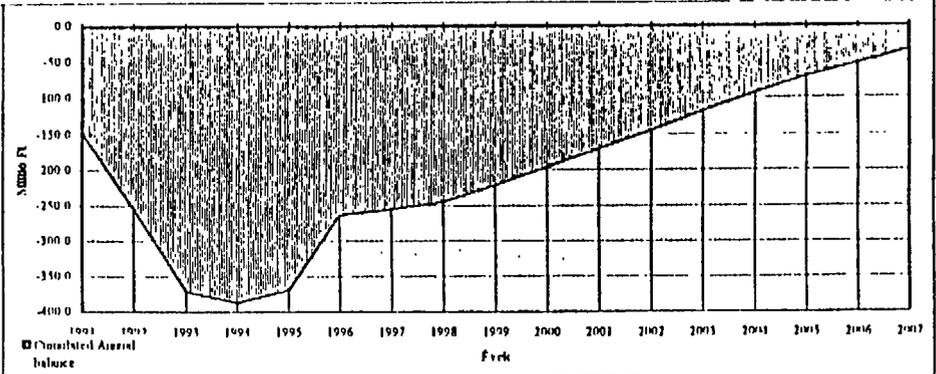
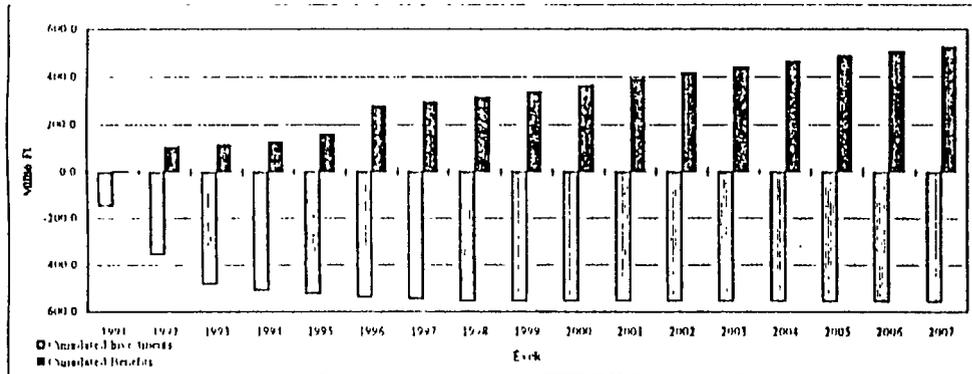
BEST AVAILABLE COPY

Figure 2 Cost benefit analysis of "Amoha" industrial park program Scenario 2

Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Investments	-148.5	-210.0	-128.6	-26.0	-14.6	-14.1	-7.3	-9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benefits	0.6	103.2	11.6	10.5	32.1	119.8	15.9	19.6	22.7	25.5	25.9	25.6	26.2	24.8	22.5	18.2	19.7
Annual balance	-147.9	-106.8	-117.0	-15.5	17.5	105.7	8.6	10.4	22.7	25.5	25.9	25.6	26.2	24.8	22.5	18.2	19.7



Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cumulated Investments	-148.5	-358.5	-487.1	-513.0	-527.6	-541.7	-549.1	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2
Cumulated Benefits	0.6	103.8	115.4	125.8	157.9	277.8	293.7	313.3	336.0	361.5	387.3	413.0	439.2	464.0	486.5	504.7	524.4
Cumulated Annual balance	-147.9	-254.7	-371.7	-387.2	-369.7	-264.0	-255.4	-244.9	-222.2	-196.8	-170.9	-145.2	-119.1	-94.3	-71.7	-53.5	-33.8



52

ELEMENTS OF DECISION MAKING

PROFESSIONAL/SECTOR ASPECTS

- RESPONSIBILITY TO UNDERTAKE
TASKS
- EFFORTS TO INCREASE QUALITY AND
TO IMPROVE
- DEVELOPMENT AND MODERNIZATION
PROGRAMS

ELEMENTS OF DECISION MAKING

- FINANCIAL REALITIES
 - GENERAL CONSTRAINTS AND QUALITY
TO BE TARGETED
 - FEASIBILITY AND PROFITABILITY
 - LIFE-CYCLE ANALYSIS, LONG TERM
IMPACTS

ELEMENTS OF DECISION MAKING

- POLITICAL REALITIES
 - APPROVED COMMUNITY POLICY AND STRATEGIC GOALS
 - PUBLIC SUPPORT - COMPROMISE - POLITICAL PRICE
 - MARKETING - PUBLICITY

TECHNICAL ISSUES

- COMMON TECHNICAL PROBLEMS
 - LIMITED RESOURCES ARE FAR SMALLER THAN NEEDS
 - THE SCOPE AND QUALITY OF INFORMATION IS LIKELY TO BE VERY LIMITED AND TO DIFFER WIDELY AMONG AGENCIES
 - THERE ARE INHERENT DIFFICULTIES IN COMPARING DIVERSE PROJECTS

TECHNICAL ISSUES

- IDEAL CONDITIONS
 - ALL CAPITAL PROJECT PROPOSALS WOULD BE RATED ON THE SAME COMPREHENSIVE SET OF EVALUATION CRITERIA
 - COMPLETE, VALID INFORMATION WOULD BE PROVIDED ON EACH CRITERION FOR EACH PROJECT
 - INFORMATION ON THE DIVERSE CRITERIA COULD BE READILY COMBINED TO PROVIDE A CLEAR PICTURE OF VALUE AND A CLEAR ORDER OF PRIORITY

EVALUATION CRITERIA

- COVERS THE MAJOR AREA OF CONCERN
- MINIMIZES OVERLAPS AND DUPLICATION OF CRITERIA
- EXCLUDES SECONDARY ISSUES

SUGGESTED EVALUATION CRITERIA

- FISCAL IMPACTS (COSTS AND REVENUES)
- HEALTH AND SAFETY EFFECTS
- COMMUNITY ECONOMIC EFFECTS
- ENVIRONMENTAL, AESTHETIC AND SOCIAL EFFECTS
- DISRUPTION AND INCONVENIENCE CAUSED BY THE PROJECT

SUGGESTED EVALUATION CRITERIA

- DISTRIBUTIONAL EFFECTS
 - WHO IS AFFECTED AND HOW
- FEASIBILITY
 - PUBLIC SUPPORT
 - PROJECT READINESS
- IMPLCIATIONS OF DEFERRING THE PROJECT

SUGGESTED EVALUATION CRITERIA

- AMOUNT OF UNCERTAINTY AND RISK
- EFFECTS ON INTERJURISDICTIONAL RELATIONSHIPS
- ADVANTAGES ACCRUING FROM RELATIONSHIPS TO OTHER CAPITAL PROPOSALS

TECHNICAL ISSUES OF RATING AND RANKING

- USE OF INFORMATION
- USING SPECIAL EVALUATION CRITERIA FOR SOME SERVICES
- ACCESSIBILITY OF VALID INFORMATION
- DEFINING RATING CATEGORIES

TECHNICAL ISSUES OF RATING AND RANKING

- AGGREGATING INFORMATION ON VARIOUS CRITERIA TO MAKE ACROSS-PROJECT COMPARISONS
- AGGREGATE IMPACTS OF ALL PROJECTS
- HANDLING CAPITAL PROPOSALS INVOLVING DIFFERENT FUNDING RESOURCES
- DETERMINING THE TOTAL SIZE OF THE CAPITAL BUDGET

PRIORITY SETTING PROCESS SHOULD

- BE CLEAR AND UNDERSTANDABLE
- BE COMPREHENSIVE
- MINIMIZE DOUBLE-COUNTING OF EVALUATIVE CRITERIA
- PROVIDE VALID, ACCURATE INFORMATION
- CLEARLY ARTICULATE VALUE JUDGEMENTS MADE BY NON-ELECTED OFFICIALS

PRIORITY SETTING PROCESS SHOULD

- PROVIDE INFORMATION ON
 - RELATIVE RANKING OF PROJECTS
 - INDIVIDUAL VALUES OF PROJECTS
- IGNORE MINOR DIFFERENCES IN RATINGS
- HAVE RATINGS DESIGNED TO SPOTLIGHT URGENT OR CRITICAL PROJECTS

PRIORITY SETTING PROCESS SHOULD

- CONSIDER POSSIBLE INTERDEPENDENCIES AMONG PROJECTS
- BE PRACTICAL IN TERMS OF
 - COST
 - TIME
 - PERSONNEL AVAILABLE

SHORTCUTS IN PRIORITY SETTING PROCESS

- CONDUCT A PRELIMINARY SCREENING
- REQUEST REDUCED INFORMATION FOR INEXPENSIVE PROJECTS
- FOCUS REVIEW ON MOST IMPORTANT PROJECTS
- FOCUS ON PROJECTS NEAR "CUT-OFF" POINT

SHORTCUTS IN PRIORITY SETTING PROCESS

- FOCUS ON EVALUATION CRITERIA THAT ARE MOST RELEVANT AND SIGNIFICANT TO THE INDIVIDUAL PROJECTS
- SUMMARIZE AND HIGHLIGHT KEY ISSUES ON THE SET OF PROPOSALS

ORGANIZATIONAL ISSUES

- OPERATING DEPARTMENTS
- CENTRAL UNITS
- GENERAL CITIZENRY
- ELECTED AND APPOINTED OFFICIALS

POLITICAL CONSIDERATIONS

SUMMARY OF FINDINGS AND RECOMMENDATIONS

- NO PERFECT SET OF CRITERIA EXISTS, BUT AN ADEQUATE SYSTEM CAN BE DEVELOPED
- A SYSTEMATIC RATING AND RANKING PROCEDURE SHOULD BE DEVELOPED
 - WITHIN INDIVIDUAL FUNCTIONAL AREAS
 - ACROSS FUNCTIONAL AREAS

SUMMARY OF FINDINGS AND RECOMMENDATIONS

- WEIGHTS THEMSELVES ARE POLICY DECISIONS, BASED ON VALUE JUDGEMENTS
- THUS A RELATIVELY SIMPLE WEIGHING SYSTEM SHOULD BE DEVELOPED
 - DECISION MAKERS SHOULD BE PROVIDED BACKGROUND INFORMATION

SUMMARY OF FINDINGS AND RECOMMENDATIONS

- DON'T PUT TOO MANY STEPS IN THE REVIEW PROCESS OR REQUIRE INFORMATION THAT CANNOT BE UNDERSTOOD OR PROCESSED CONVENIENTLY
- FACILITY MAINTENANCE CONSIDERATIONS SHOULD BE INCORPORATED FROM THE BEGINNING

The Strategic Goals Adopted As a Basis
to Community Vision
(in an imaginary city):

- Boost economy
- Improve the environment and quality of life in the community
- Improve quality of city services
- Maintain ability to operate and switch to sustainable municipal financial management
- Do PR activities with citizens

Possible Criteria For Use In The
Decision Matrix

- Financial impacts
- Impact on sectoral policy
- Impact on economy
- Environmental impact
- Dependability on fulfilment of plans
- Impacts of distribution
- Impacts of delay
- Linkage to the rest of the interventions
- Political price/benefit

Financial impacts:

It is of fundamental importance that the financial evaluation of an intervention should not only be based on the one-time capital investment/historical purchase price, but should calculate with either the so called life cycle cost of implementation or at least should take into consideration the impacts of the capital investment on operating costs, (maintenance) and renewal expenditures.

Impact on sectoral policy:

It is worthwhile to explore to what extent the intervention will be in harmony with sectoral policies adopted earlier and where it stands in priority set up in relation to its own sector.

Impact on economy:

The impact of intervention on boosting economy should be analysed, that can be measured by looking at the labour market, real estate price increases, income of citizens/enterprises, etc. for cities, and tax and potential fee revenues or the increase in ability to pay fees for local governments.

This criteria evaluates whether the project will have an impact on boosting the economy in the city or in a part of it.

Environmental impact:

When evaluating environment (natural and built), the overall impact (quality of life) should be analysed, thus, by using this parameter, a complex analysis should be carried out of impacts on health, natural environment and impacts of aesthetics.

Dependability on fulfilment of plans:

Security of implementation belongs to this criteria, including whether a thing receives support or is dependant on factors that are not under direct control of the local government, or any other factors that represent the risk that even if there is a positive decision about intervention, the measure of intervention cannot be implemented. Such factor can be inadequate preparation for a project or incomplete information for decision-making.

The security of feasibility, and the ability to quantify and plan the direct and indirect impacts that are to be achieved as explained in the justification to the project in the decision-making process. The extent to which plans can be realised.

Impacts of distribution:

That can be analysed either on the level of society, i.e. which groups of society are affected positively or adversely, or can mean a local concentration of improved or worsened services or lack of services, which can be important not only because it might be unfair but also in the case when the net impact of several factors may jeopardise the delivery of some services.

Impacts of delay:

This factor is worth considering because various types of interventions are different in sensibility to the timing of implementation.

Linkage to the rest of the interventions:

It is important, since an intervention may strengthen or weaken the positive or negative impacts of other interventions. By using this factor, the probability of implementation of interventions belonging to a group of related interventions can be increased. (The use of this factor, however, will not give rise to the necessity of subsequent validation of the results of the decision matrix. see later.)

Political price/benefit:

It is better to include this factor in the matrix, but since the matrix itself is not the decision, is only a preparatory instrument for decision-making, this factor may also be left for use only in the phase of actual decision-making.

EXERCISE

FINANCIAL POLICY & ANALYSIS

You have just completed the financial and demographic forecast for Average City, population 35,000. The results of your analysis are attached. A capital inventory of the community reveals many infrastructure needs. A number of streets are in disrepair. The water and sewer systems are old and in need of rehabilitation. Street sweeping equipment breaks down requiring that too much handwork be done. Furthermore, a number of budgetary institutions have expressed their needs for various capital improvements. The Average City economic department has completed its community revitalization study which calls for the removal of blighted areas, rehabilitation of existing housing, and targeting certain capital improvements to these areas. A brief look at Average City's financial data illustrates that it lacks the financial capacity to meet all its infrastructure needs. New funding sources and approaches will be required to meet these needs.

It is clear that if Average City wishes to meet such needs in capital demands, a disciplined approach to planning and execution is necessary. As City leaders, you have found it necessary to set forth this disciplined approach to meet these needs in the form of a set of financial policies designed to address all key risk areas.

Question 1

Working as a group, establish the broad limits indicated below. Establishing these will require some calculations and a considerable amount of judgment. Use the attached sheet. Don't take too much time since the real product of this exercise is in Question 2.

- a) A reasonable upper limit (based on financial prudence and public acceptance) for a tax increase in any one year.
- b) A reasonable upper limit for debt service as a percentage of operating revenue.
- c) A reasonable upper limit for debt per capita.
- d) A reasonable upper limit for capital spending in any one year based on Average City's capacity to manage the implementation of the capital projects it undertakes.
- e) A reasonable upper limit on the percent of added operating expenses in any one year resulting from new capital improvements.
- f) A reasonable upper limit on the amount of the annual operating budget that could be devoted to capital improvements expenditures on a "pay-as-you-go" basis.

Question 2

Working as a group, write three financial policy statements for Average City. (These policies also will guide the ranking and rating of individual capital project proposals discussed in tomorrow's session.) Policy statements should address issues relating to:

- timing of the implementation of the capital program (e.g., all in one year, 5 years, 10 years, etc.)
- methods of funding (e.g., no debt, all debt, operating revenues, capital reserve account, sale of securities, subsidies, fees and other revenues, sale of real estate, privatization of public works).
- cost parameters (e.g., 10% increase in taxes, limit increase in fees to no more 25%, decrease in operating expenses by 5% through reduction of efficiencies).

In base of 1992

Million of HUF	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Revenues												
Total revenue	3 028,6	2 714,1	2 754,0	2 633,2	4 677,6	4 993,5						
Centrally regulated sources	1 775,2	1 564,0	1 436,9	1 309,3	2 306,8	2 513,1						
<i>Income tax (incl. H. vehicle)</i>	406,9	311,5	311,1	310,1	553,1	592,6						
<i>Income tax (incl. H. vehicle)</i>	1 161,6	1 120,1	920,5	820,2	1 397,1	1 377,7						
<i>State transfers (incl. east European) Subsidy</i>	143,6	131,2	202,1	212,7	119,4	505,8						
Own operating revenues	639,1	608,0	615,6	599,2	1 011,1	1 069,0						
<i>Local taxes (incl. business tax)</i>	69,2	81,7	93,5	111,7	206,9	230,7						
<i>Local taxes (property tax, town tax, comm.)</i>	18,6	18,8	16,1	10,4	21,5	22,1						
<i>Other taxes, fees, other own revenues</i>	551,3	504,6	506,0	477,1	802,7	816,9						
Own capital sources	296,3	168,5	239,0	282,9	476,2	401,4						
<i>Proceeds from sale of assets</i>	267,8	151,1	201,6	211,9	359,6	375,0						
<i>Revenue from property</i>	28,5	17,2	35,2	30,0	116,6	106,4						
Loans	66,2	115,7	228,9	174,0	421,3	519,4						
<i>Social Security transfer</i>	197,4	193,8	186,4	161,7	297,7	318,5						
Balance of the previous and present year remainings	54,0	42,2	42,4	22,7	53,5	56,8						
<i>Transfers from the previous year</i>	0,4	0,0	2,9	2,6	11,3	14,5						
Expenditures												
Total expenditures	2 612,6	2 470,9	2 516,9	2 455,2	4 434,9	4 802,3						
Operation cost	2 110,1	2 094,1	2 040,4	1 928,8	3 369,3	3 621,0						
<i>Office of Mayor</i>	271,2	275,0	290,9	305,3	565,7	611,9						
<i>Health</i>	314,8	261,9	237,2	220,6	390,2	421,8						
<i>Education</i>	1 183,1	1 250,4	1 101,5	1 105,8	1 877,5	2 011,7						
<i>Social</i>	166,9	174,1	175,5	181,4	321,0	315,0						
<i>Culture, Sport</i>	163,6	116,3	110,5	107,0	185,5	183,1						
<i>Other operating cost</i>	10,1	16,1	11,0	12,9	18,1	16,1						
Capital investments	455,1	341,4	335,9	324,2	659,2	602,5						
<i>Office of Mayor</i>	210,7	110,0	116,2	129,0	253,7	271,8						
<i>Health</i>	19,6	9,9	9,9	7,1	12,9	14,0						
<i>Education</i>	83,1	95,8	61,4	77,1	155,6	160,1						
<i>Social</i>	5,1	6,1	4,0	7,2	12,8	11,7						
<i>Culture, Sport</i>	132,2	81,8	106,4	71,1	183,9	196,7						
<i>Other investment</i>	3,4	3,5	6,1	29,0	40,3	25,0						
Debt service	47,4	35,4	140,5	202,1	406,4	495,8						
Other outlay expenditures	0,0	0,1	1,3	0,7	2,2	0,0						
Change cash	0,0	0,0	0,0	0,0	0,0	0,0						
Statistical indicators												
Population	12,000	37,000	37,000	36,000	36,000	35,000						
GDP per capita	9	7	9	9	8	7						
Local government employees	0	0	0	0	0	0						
Outstanding debt	170	291	381	505	483	471						
Value of the asset	2 571	1 101	1 264	2 906	3 561	3 151						
Unemployment rate	0,0	0,0	0,0	0,0	0,0	0,0						
Number of local budget unit	0	0	0	0	0	0						
Debt to GDP (percent)	0	0	0	0	0	0						

72

After careful preparation, the municipality has decided to extend the sewage system to a neighborhood called Little Waterside. There are 500 households (3.5 members on average) living in this neighborhood, who have long demanded to connect up to the system

The total cost of the investment is HUF 200 billion, financing the construction of 20 kilometers of pipeline.

The task is to find financial resources to carry out the investment and to find the best alternative. For the sake of simplicity, it is assumed that there is no inflation.

Your choice should be based on the guidelines you laid down in the previous exercise about loans, local taxes and user fees. There are the following financing resources available:

1. Targeted subsidy

which is a grant up to 20% of investment costs. Your financial officials have gathered through informal information that there is no obstacle to the community's being granted the subsidy.

2. Selling municipal assets

The Assembly has some time ago made a decision that HUF 70 million worth of securities (which are the municipality's assets from privatization) can be one resource for the investment. Professionals say that the securities ensure 8% in dividends for the municipality, however, the Assembly earlier had decided that the yields were to be granted to the local soccer team through the Sports Committee. According to a previous Assembly decision, the loss in incomes, incurred by selling the securities, should be recovered from local - citizen - taxes. It also has to be noted that many have doubted whether shares of the Wooden Plough LTD will yield 8% yield in the long run

3. Borrowing

The bank handling the municipality's accounts offered to lend, but the Assembly's decision limits borrowing to HUF 150 million. The interest rate is 6.5% and the maturity period is 10 years. Costs of the loan will be recovered from families who benefit from the project.

4. Utility improvement contributions

The municipality has conducted a survey about citizens' ability to pay. The conclusion of the survey is that each household is able to pay HUF 60,000 at maximum. (Households may take out subsidized loans, which improves their ability to pay)

The local government has passed a decision that local taxes must not be increased by more than HUF 1500 per household and the sewage fee must not be more than HUF 4000/month/household

To what extent does your choice of alternative reflect the guidelines you have laid down in the previous exercise?

BEST AVAILABLE COPY

BACKGROUND INFORMATION	
200 HUF mill total costs	5 m ³ /capita consumption
20 kms of sewage pipeline	3,5 members in hsh on average
500 number of affected hsh	50 000 average hsh income
35 000 population in the city	45% share of tax payers

Investment funds	Limits	Alternative 1	Alternative 2	Alternative 3.	Alternative 4.
		% of total costs HUF mill			
Local revenue from sales of assets	HUF 70 mill				
Central government grant	20% of costs				
Loan from commercial banks	HUF 150 mill				
Local citizens' direct contribution	HUF 60000/ capita				

Affected households

One-time fee for connecting up	HUF 60000/hsh				
Monthly sewage fee	HUF 4000/capita				

Tax levied on total population

HUF 1500/year				
---------------	--	--	--	--

Optimal model	
Investment funds	Limits
Local revenue from sales of assets	
Central government grant	
Loan from commercial banks	
Local citizens' direct contribution	

74

Modell US

BACKGROUND INFORMATION	
200 mill HUF total costs	5 m3/capita consumption
20 km length of sewage	3,5 member in hsh on average
500 number of affected hsh	50 000 average household income
35 000 population in the city	45% share of tax payers

	Limits	Specific resource		Supplementary information		
		as % of total costs	HUF million	Interest rate	Maturity period in years	Monthly payment
Investment fund						
Local revenue from sales of assets	HUF 70 million	25%	50	8%	4	1,221
Central government grants	20% of costs	20%	40			
Loan from commercial banks	HUF 150 million	50%	100	6,5%	10	1,135
Local citizens' direct contribution	HUF 60000/capita	5%	10			
		100%	200			

Number of affected households		
One time fee for connecting up	HUF 60,000/hsh	20 000
Monthly sewage fee	HUF 4000/capita	3 937
Tax levied on total population	HUF 1500/year	930

Expenditures	Limits	Monthly
Capital costs		1,135 HUF mill
Operating costs		0,833 HUF mill
Total monthly costs(HUFmill)		1,968 HUF mill
Total cost per 1m3 per month		225 HUF/m3
Average monthly cost per household	4 000 Ft	3 937 HUF
Costs/income		8%
Increase of local tax due to sales of assets		78 HUF

BEST AVAILABLE COPY

75

BACKGROUND READINGS

Capital Budgeting and Project Evaluation

Capital expenditures purchase assets that are expected to provide services for several years. More technically, "a capital expenditure can be defined as an outlay that produces benefits . . . in periods beyond the current accounting period."¹ That includes the public physical infrastructure, which encompasses "streets, highways, bridges, water systems, sewers, roads, airports, jails, and other public buildings and facilities."² It likewise includes equipment, motor vehicles, computers, and the like, all yielding services well beyond the fiscal year of their purchase. Therefore, special care is appropriate in decisions about the purchase of all of them. Furthermore, the price tag on most of these items tends to be high and purchases typically occur at irregular intervals. For those reasons, most governments prepare and maintain a capital budget separate from the current service expenditures in an operating budget. The distinct capital budget focuses decisions, facilitates financial planning, and regularizes the provision of such projects.

Capital budgeting by state and local government requires integration of physical and financial planning. That combination has not always been found in the provision of government capital assets:

During one phase of development of municipalities, there was a tendency to consider the capital improvement program as the exclusive domain of the Public Works Department. It was assumed that since capital improvements were largely in the nature of construction projects, the planning was

¹Maynard Comiez, *A Capital Budget Statement for the U.S. Government* (Washington, D.C.: Brookings Institution, 1966), p. 4.

²Advisory Commission on Intergovernmental Relations, *Financing Public Physical Infrastructure*, Report A-96 (Washington, D.C.: ACIR, 1984), p. 5.

of an engineering nature. After all the planning was complete, then a price tag could be established and proper plans made for the obtaining of funds necessary to carry out the program.³

That simple engineering approach seems terribly primitive today as urban mobility and socioeconomic change can render facilities obsolete in a handful of years, as the strings of intergovernmental assistance complicate many financial arrangements, and as governments operate near their legal or economic debt limits. Thus, the designers of a facility must integrate their plans with the social, economic, and financial environment. In fact, that environment will usually be of greater consequence to the capital expenditure profile than the construction plans. The capital budget process establishes the formal mechanism for consideration and adoption of construction plans within prevailing constraints. This chapter describes government capital budgets and introduces cost-benefit analysis, a powerful tool which can help guide capital budget and other public decisions.

WHY HAVE SEPARATE CAPITAL BUDGETS?

A budget process is a complex set of mechanisms in which decision makers select individual projects for funding while simultaneously trying to keep total expenditures within a revenue constraint. Maintaining two different budgets certainly seems to increase complexity of an already complex process. For capital budgets to be defensible, they must make a substantial contribution to improved fiscal choice. At state and local levels, that contribution is substantial.

First, separate consideration can improve both the efficiency and equity of provision and finance of nonrecurrent projects with long-term service flows. These projects will serve, for good or bad, the citizenry for many years beyond the year of purchase. Separate consideration in a budget where deficits may be financed rather than balanced provides important opportunities to improve equity between generations and between local citizenry pools.⁴ If a local government project with a 30-year service life is constructed and paid for this year, all the costs will be borne by those paying taxes to that government this year—no construction cost will be paid during the rest of the life of the project. Anyone entering the area taxpaying pool after the construction year (by moving into the area or by growing up) will receive project service with-

³Morris C. Matson, "Capital Budgeting—Fiscal and Physical Planning," *Governmental Finance* 5 (August 1976), p. 42.

⁴In other words, the spending program in a capital budget can be covered either by revenue raised currently (taxes, charges, grants, etc.) or by borrowing on the promise to repay from future revenues. Thus, the budget is financed (the money is raised from current revenue or debt sources), not balanced (total expenditures equals current revenue). Operating budgets typically must be balanced; capital budgets, financed.

out appropriate contribution. Thus, handling high-price, long-life projects through a debt-financed capital budget has strong equity advantages. Furthermore, the use of capital budgets can improve decision efficiency as well. In a single budget, there may well be a bias against big-ticket items. Separate consideration can avoid that bias and improve the chances for more reasonable response to service demand.⁵ Dual budgets—a balanced operating budget and a financed capital budget—thus can make important improvements in the equity and efficiency of provision of projects and producing long-term service flow.

Second, capital budgets can stabilize tax rates when individual capital projects are large relative to the tax base of the host government. If a city with a tax base of \$150 million decided to construct a \$15 million reservoir for water supply, it would undoubtedly be dissuaded if it were required to collect in one year sufficient revenue for construction. The cost would be 10 percent of the total city tax base, hardly leaving enough for police and fire protection, street operation, and so on. The reservoir may have a service life of 50 years, however. It is reasonable, then, to divide the construction cost over the service life, thus reducing the burden on the tax base each year and, accordingly, preventing the dramatic fluctuation in tax rates which would result from financing the project in the construction year. The case for a regular capital budget process is strong whenever projects are likely to be large enough to significantly influence tax rates.⁶

Third, the special reviews of capital budgeting are appropriate because of the permanence of capital projects—mistakes will be around for many years. Howard illustrates the problem:

If a new state office building is built today, it will stay there for a long time. Everybody may know by next year that it is in the wrong place, but not much can be done about moving it then. Perhaps it is disrupting the development of a downtown business district; perhaps it is affecting traffic flows and parking facilities in a most undesirable way; or perhaps its location makes it psychologically, if not geographically, far removed from certain segments of the population. Whatever these effects may be, they are real, and they will endure awhile. They should be anticipated to the fullest extent possible *before* the project is undertaken.⁷

⁵In a related vein, Moak and Hillhouse suggest that governments having financial trouble may find that identifiable capital projects are more easily postponed than are expenditures for operating agencies. A capital budget separately considered can improve the chances for preservation of those projects when the operating budget is under great pressure. Lennox L. Moak and Albert M. Hillhouse, *Concepts and Practices in Local Government Finance* (Chicago: Municipal Finance Officers Association, 1975), p. 95.

⁶Projects in a capital budget need not automatically be debt-financed. As will be discussed in the debt administration chapter, capital projects that recur can and should be financed from current revenue.

⁷Kenneth Howard, *Changing State Budgeting* (Lexington, Ky: Council of State Governments, 1970), p. 241.

The capital budget reviews will not prevent all mistakes, but they can provide as much opportunity as possible for reduction of costly errors. On the positive side, those reviews and associated planning processes can produce the orderly provision of public capital facilities to accommodate economic development. Thus, the capital budget process serves to reduce errors both of commission and omission in public infrastructure construction.

Finally, capital budgets are valuable tools for management of limited fiscal resources, particularly in light of the special care required to plan activities which necessitate long-term drains on those resources. Items in this budget tend to be "lumpy." A capital budget provides a mechanism to smooth out peaks and valleys, to regularize construction activity in an effort to avoid local bottlenecks that can delay projects and inflate their cost, to avoid excessive drains on the tax base when projects must be paid for, and to balance spending with the resources available within political, economic, and legal tax and debt limits. Thus, the capital budget is an important resource management tool.

The reasons supporting a separate capital budget are strongest for local and state governments. They are less strong at the federal level. First, the federal government is charged with economic stabilization responsibilities which, according to many proponents of fiscal policy, require periods of net deficit and net federal surplus to induce appropriate macroeconomic stimulus. Dual budgets—one balanced, one not—would unnecessarily hinder federal stabilization efforts. Second, the federal government is so large that no single project is likely to influence tax rates. Third, the federal government does not need the careful planning of project financing inherent in capital budgeting to preserve its debt rating. It has, after all, the ultimate power of printing money to cover deficits. And finally, skeptics say that another budget would simply provide federal bureaucrats, already insulated from public scrutiny by existing spending and personnel mechanisms, with another way to conceal fiscal conditions. Thus, the gains from capital budgeting at lower government levels, particularly local, cannot be translated to a similar federal case.⁹

Capital budgeting promises a significant contribution to the fiscal operation of state and local government.

⁹As an aside, it should be pointed out that governments work with capital budgets as a device for managing their capital assets. Contrary to the practice of businesses, governments do not use depreciation accounting, nor do they need to. Businesses depreciate so that they can estimate what their profit (or loss) is in any particular year. Governments do not sell products, so they simply cannot produce such estimates. Their capital management task involves deciding whether particular projects are worth undertaking or continuing; there is no need for annual cost judgments. More discussion of this point appears in Jesse Burkhead, *Government Budgeting* (New York: John Wiley & Sons, 1963), p. 205.

The capital budget . . . provides a vehicle for financial planning and for the regulation of local tax rates. It thus contributes to financial solvency, and at the same time assures that over a period of years needed improvements will be constructed.⁹

A Capital Budget Process

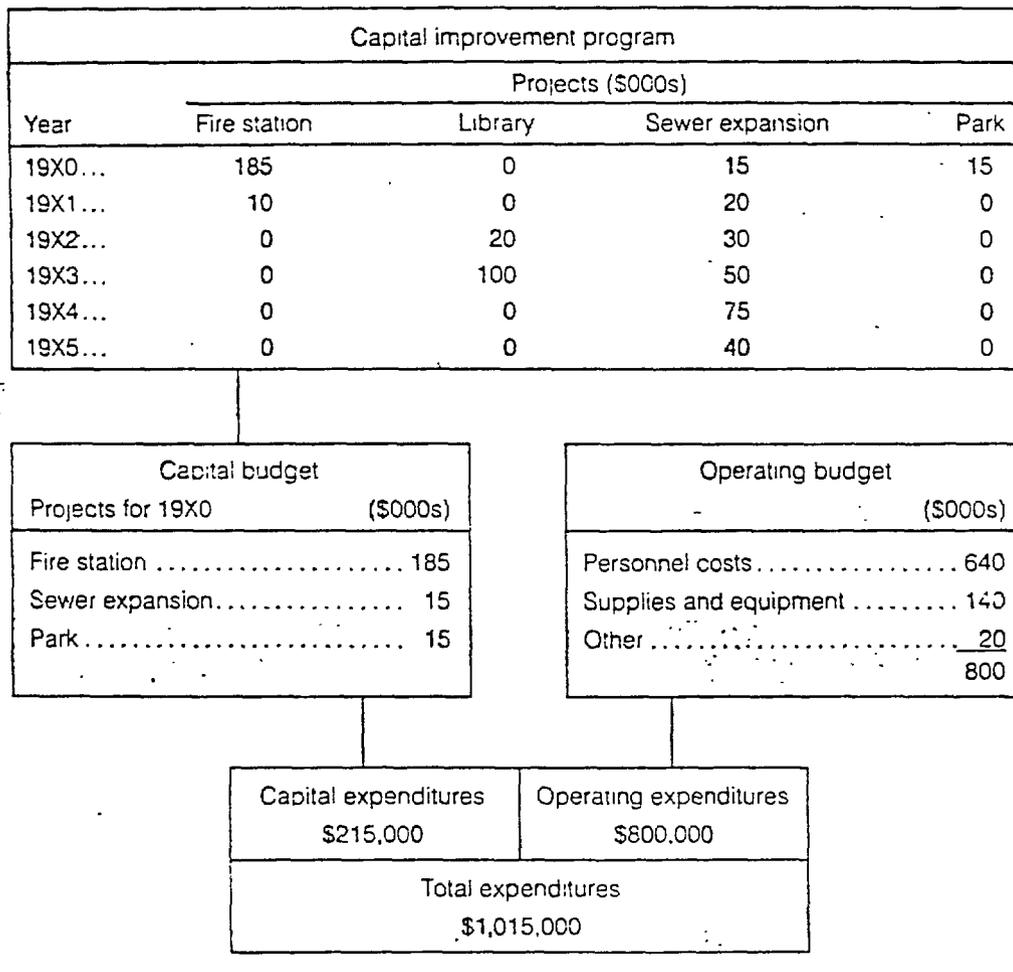
Governments apply capital budgeting processes in many different ways, using various terms, steps, and staging of those steps. The process described here amalgamates several processes for illustration; most operating systems can easily be identified with this outline. In broad strokes, capital budgeting processes are concerned with (1) the selection of capital projects from the multitude of possible alternatives, (2) the timing of expenditure on the projects selected, and (3) the impact on total government finances of various plans which might be used to finance that spending. The steps outlined here encompass both physical planning and financial emphasis.

A capital budget process involves both planning and financial officers; Figure 5-1 provides a rough view of the flow and relationships in the process. The initial stage in the process is the preparation of a capital improvement program, a listing of capital expenditure projects appropriate for the next six years or so. That list is proposed by government agencies and sometimes private organizations as well; each project proposal includes justifying narrative along with cost data. These project proposals are screened by a city planning department or a similar body to evaluate costs, to locate interrelationships, and to establish initial priorities. This screening is particularly concerned with scheduling: projects should be timed to avoid waste (the sewers should be put in before the streets are resurfaced), predetermined program emphases should be implemented, and postponable projects should be identified.¹⁰ Part of this priority review may be linked to a community master plan—a long-term (10- to 25-year), broad gauge estimate of community growth encompassing estimated needs for public improvements and controls on private use of property. (Because long-term forecasts of social, demographic, and economic behavior are so bad, however, that plan ought not be taken too seriously as a guide to actions.) The final capital improvement program will thus have a segment scheduled for each year of its span. The capital budget proposal includes the current year's work from the capital improvement program.

⁹Ibid., p. 155.

¹⁰Moax and Hillhouse, *Concepts and Practices*, pp. 104-5.

FIGURE 5-1



The second stage of the process coordinates a financial analysis of the government with the facility additions envisioned in the capital improvement program. This interrelationship is vital because of the long-term fiscal commitments that such facilities can involve: just as a poorly conceived structure can disrupt a city for many years, so too can a poorly conceived financing approach disrupt that city's fiscal condition. Finance officers must examine the present and anticipated revenue and expenditure profile to determine the financial cushion available for new projects. Particularly important are the status of existing debt issues (Will any issues be retired soon? Will funds be available to meet contractual debt service—principal and interest—payments? Are there needs for extra funds for early bond retirement?), the estimated growth profile of the tax base, and the potential for new revenue sources. This fiscal profile, year by year, can be then related to the priority list of projects, again scheduled by years. In this analysis, fiscal

officers usually consider the financing alternatives available for specific projects (special assessments for sidewalks, user charges for water utilities, state or federal aid for highways, etc.) and further reports will have sources attached to projects.¹¹ From those considerations, the project list is revised in preparation for its insertion into the annual budget process. The financial analysis may permit the project schedule to remain intact, but it may well require changes based on financial conditions. In the latter instance, budget officers must devise priorities for funding, often in consultation with the chief executive (mayor or governor). One set of ranking has been used in Wisconsin:

1. Hazard to safety.
2. To fully utilize present facilities.
3. For present program expansion.
4. For future program expansion.¹²

Other projects may be evaluated with cost-benefit analysis, as described later in this chapter. Ordinarily, some choices must get made even before the projects are proposed for legislative approval.

Capital items, thus, typically are reviewed for inclusion in the capital budget before they are proposed for legislative review and approval. An illustration of the classes of projects often included appears in Figure 5-2, the groupings used in Pennsylvania. Because capital items have implications for many future years, it is appropriate that they receive that special review in the decision process. Furthermore, the CIP review is typically by planners, not budgeting personnel, so the two reviews won't emphasize the same questions. In addition, the CIP may have been prepared some years before and economic or demographic conditions may not match those earlier forecasts. The process thus provides a timely review of the project.

Finally, the surviving projects envisioned in the capital improvement program become the capital budget section of the annual budget. The projects will be reviewed by the legislature and sometimes are substantially modified. When projects are approved, provision must also be made in the operating budget for operation and maintenance of the facility when it is complete: the new civic arena won't do much good if the operating budget has no money for its interior lighting. The capital portion of the budget document usually provides a distribution of projects by function and agency, shows prior and estimated future cost of the project (initial appropriations may well have been annual—each

¹¹Furthermore, the fiscal officers make choices about the financing policy selected for each project: borrowing, general obligation or revenue bonds; use of capital reserve funds (special funds accumulated over time for future capital spending), or pay as you go. These choices are examined in the debt administration chapter.

¹²Howard, *Changing State Budgeting*, p. 257. The system does bias against new programs.

FIGURE 5-2 Groups for the Capital Budget: Pennsylvania

For the purpose of the Capital Budget, capital projects are grouped into the following categories:

- Public improvement projects—Includes all types of new buildings and renovation projects, nonstructural improvements and land acquisition.
 - Public improvements—original furnishing and equipment—Includes purchase of initial furniture and equipment for furnishing completed public improvement projects.
 - Transportation assistance projects—Includes (a) the purchase of rolling stock, equipment, and construction or improvement of facilities operated by mass transportation agencies throughout the commonwealth, and (b) the acquisition, construction, and equipping of rural and intercity common carrier surface transportation systems or any components thereof as authorized in Act 10 of 1976.
 - Highway projects—Includes the design, purchase of right-of-way, and construction of the following improvements to highways and bridges on the state highway system:
 - a. New road and bridge construction.
 - b. All bridge replacements greater than 20 feet.
 - c. Improvements to existing trafficways which increase capacity or ingress/egress.
 - d. Highway safety projects which constitute an improvement.
-

SOURCE: Office of the Budget, Commonwealth of Pennsylvania, *The Budget Process in Pennsylvania*, June 1983, p. 20.

year's construction plan requires a new appropriation), and summarizes sources of financing (type of debt, aid, etc.). The capital improvement program thus feeds the capital budget on an annual basis: next year's segment of the capital plan becomes the capital budget proposal for next year, subject to revisions produced by the environmental conditions and the legislative process.

Total expenditures by the government include both the operating expenditures from the operating budget and capital purchases from the capital budget. The former expenditures will normally be financed by current revenue (taxes, grants, charges, etc., collected in the current year). Part of the capital budget will likely be handled on a current basis as well. The balance of capital project cost, however, will undoubtedly be debt-financed, so revenue to liquidate that debt will be raised in later years. Thus, the revenue to be generated in any budget year will equal the operating budget plus a capital project component. The latter equals capital items purchased without debt plus the debt service requirements (interest and repayment of principal) on borrowing for capital items purchased in prior years. Those debt costs would ideally approximate a depreciation charge for capital assets that have been acquired in the past: serial bonds (bonds in a single project issue which are to be paid off at various dates through the life of the project) are a rough approximation of that cost distribution.

Problems in Capital Budgeting

As is always the case with mechanisms to assist in making public decisions, there are problems in the application of capital budgeting. First, the capital improvement-capital budget process presumes a continuous cycle of reappraisal and revaluation of project proposals. That is necessary because the world changes, bringing substantial changes in the need for public projects. Unfortunately, many processes regard priorities, once established, to be unchangeable, even in the face of different project cost and different project demand. As Howard points out: "Too often cost fluctuations do not generate a reassessment of priority rankings; original rankings are retained *despite* the fluctuations."¹³ Thus, many state highway construction plans are based on traffic patterns assuming 50-cent-per-gallon gasoline—they need to be revised. In a related manner, the time a project has spent in the priority queue sometimes establishes its priority rank: all old project proposals have higher rankings than any new ones. That approach makes no sense, because time alone does not improve the viability of a project which was marginal when it was first proposed. Furthermore, items entering the priority queue some years ago may have outlived their usefulness by the time they reach the funding point. Again, the problem can be resolved by maintaining reviews of projects in the capital improvement program.

Second, there can be questions about what projects or programs belong in the capital budget because, in the strictest sense, more than capital assets provide future benefit flows. Planning and zoning departments, educational institutions, training programs, and so on all provide benefits which extend beyond the year in which the service expenditure is made. Most generally, however, these activities would properly be excluded from the capital budget because spending for them is *recurrent*: it is not the single-year spending situation, the kind that needs special capital treatment. Further, most processes will establish dollar-size limits for capital budget treatment: a \$500 typewriter, useful life of eight years, would be part of the operating budget, whereas an \$8,500 automobile, useful life of four years, would be in the capital budget. Dollar limits will differ, but some limit will usually be encountered. Such arbitrary rules are a common factor in any decision process.

Third, availability of funds can distort the priority ranks. As Howard observes: "Despite the fact that how a project is financed does not change the need for it, there is a strong tendency for differences in the availability of capital outlay funds to skew priority decisions."¹⁴ The appropriate approach in establishing final priorities should involve a

¹³Ibid., p. 256.

¹⁴Ibid.

general comparison of the cost of the project with the return to the community from the project—the source of money doesn't matter in that comparison. Some projects can get favored, however, because earmarked funds are available (a special tax creates a fund pool which can be spent only on one class of project); because they produce revenue which can be pledged to repayment of revenue bonds without direct tax burden or need to satisfy restrictions placed on general debt; or because federal or state assistance is available for particular projects. The purpose of many grants is to bend local priorities, so that influence is excusable. The other influences, however, are inappropriate and show why most analysts oppose such fiscal constraints.

Fourth, capital budgeting can bias toward acquisition of items by borrowing. Borrowing may not always be desirable, as with items which are acquired on a regular flow basis. Furthermore, during inflation the bias can add to macroeconomic pressures if state and local governments all operate in about the same fashion. Thoughtful fiscal analysis, however, should prevent that bias—if political pressure can be withstood.

Finally, there is the standard problem in all public decisions. That is the problem of establishing priorities in the capital improvement program. How do items get put into the capital improvement program, and which ones finally enter the capital budget? Benefit-cost analysis, to be examined next, gives some assistance, but as with ordinary items, there are no final answers.

BENEFIT-COST ANALYSIS

The constant problem in public program choice is the judgment whether a particular program is worth its cost, because society cannot afford to waste its scarce resources. Benefit-cost analysis provides a way of organizing information about a program under consideration so that priorities may be reasonably established. A private firm considering a major project, say, the purchase of a new delivery truck to replace an older and smaller one, compares the anticipated increase in revenue from the new truck with the anticipated increase in cost, after making adjustments for the time the costs and revenues are received. If the revenue exceeds cost, the purchase of the truck is a wise use of the firm's scarce resources; if not, the purchase is unwise.

Benefit-cost analysis is the governmental analogue to that process described for the firm: governments can and have used it for assistance in making decisions as diverse as decisions on word processing equipment acquisition, vehicle fleet modernization, water resource development, communicable disease control programs, development of a supersonic transport plane, and license plate reflectorization. It has also been applied to evaluate the worth of numerous governmental regulations.⁵ For capital budget purposes, however, its application is much

like that of private firm choice: the analysis estimates whether the gain to society (benefit) from the project is greater than the social sacrifice (cost) required to produce the project. If so, the project is worthwhile; if not, then the project is not worthwhile. Worthwhile projects improve the total economic affluence of society because they direct resources where their use provides a greater return than would other alternative use.

Skeptics point out that political bargaining characterizes the public decision process; it is not an exercise in rational consideration by nonpolitical administrators.¹⁶ So what service can benefit-cost analysis provide in that environment? First, the analysis informs that bargaining because it can augment the political influence of underrepresented potential beneficiaries or identify the position of cost bearers. A display of costs and benefits makes it more difficult for the unrepresented to be ignored in political bargaining. In some instances, it can be a valuable weapon in the "it pays for itself" budget strategy. Second, economic efficiency—the guiding force of benefit-cost analysis—is but one of several public goals. Even though a decision may not be based primarily on those grounds, the potential gains sacrificed in the selection of a particular public policy is important information. And finally, benefit-cost analysis forces public decisions to focus on the value of competing alternatives. Valuation and the accompanying process of competing priorities are the keys to sound decision making, so benefit-cost analysis directs attention to vital questions.

Elements in Benefit-Cost Analysis

Five steps make up formal benefit-cost analysis: (1) categorization of project objectives; (2) estimation of the project impact on objectives; (3) estimation of project costs; (4) discounting of cost and benefit flows at an appropriate discount rate; and (5) summarization of findings in a fashion usable for choices. Their exact content varies according to the type of project considered; the following discussion focuses on common elements and their application in selected situations.

Project Objectives

The project analysis should identify the benefits that the project will produce. What desirable results will happen because of the project? The relationship between the project and the objective must be traceable to establish a sound foundation for the analysis. Some examples: a

¹⁶James C. Miller III and Bruce Yandie, *Benefit-Cost Analyses of Social Regulation* (Washington, D.C.: American Enterprise Institute, 1979).

¹⁷Federal water resource projects have one of the longest histories of cost-benefit applications. Even here, Schenker and Bunamo indicate that these projects are strongly influenced by purely political factors when examined across regions in the United States. (Eric Schenker and Michael Bunamo, "A Study of the Costs of Engineers' Regional Pa

rapid transit system could increase travel speed (saving time for travelers), reduce accident costs, and reduce private vehicle operation costs. A water project might reduce flood damage, provide water for residential and other use, and improve effluent dilution conditions for water quality management. A new fire station may reduce operating costs of an older facility and reduce prospective fire loss in a service area. A word processing system may reduce labor and material costs and filing expenses. It is critical, however, that the analysis embody the principle that decisions focus on the factors that are different in the options under consideration. Nothing can be gained by examination of factors that are not changed by the decision. The principle seems too simple to matter, except that much policy argument does take place around elements that will not change regardless of the choice selected.

The benefit-cost logic is not limited to complex projects, but can be particularly useful in more narrow public management decisions about alternative methods of accomplishing a particular task. Among the applications are repair-replace and lease-purchase decisions, fuel conversion, modernization choices, EDP equipment acquisitions, and so on. In these decisions, the objective is simply to perform a task at least cost, often when one option involves a capital expenditure and others do not.

Benefit Estimation and Valuation

A Senate guide to water project evaluation defines benefits as "increase or gains, net of associated or induced costs, in the value of goods and services which result from conditions with the project, as compared with conditions without the project."¹⁷ The same logic applies to any project. Thus, the analyst must estimate for the life of the project both physical changes from the project and the value of these changes. No standard method applies for all projects: techniques used to estimate benefits of a personnel training project would not be the same as those used in water projects. Regardless of the project, however, the decision must be made from estimates, not facts, because facts in economic or social relationships can only be historical. Present decisions cannot change what has already happened. One observer points out: "No amount of sophistication is going to allay the fact that all your knowledge is about the past and all your decisions are about the future."¹⁸ The analysis must proceed with best estimates; it cannot be paralyzed by lack of complete information because complete information only is available when it is too late to make a decision.

¹⁷ *Policies, Standards and Procedures in the Formulation, Evaluation and Review of Plans for Use in Development of Water and Related Land Resources*, 87th Congress, 2d

An initial step estimates the physical size of the change that can be expected from the project. Sometimes a controlled experiment on a sample can estimate probable effects before resources are committed to the entire program. For instance, the state of Virginia estimated the likely benefits of reflectorized motor vehicle license plates by comparing accident frequency among a random sample of cars equipped with these plates with frequency in the remainder of the population.¹⁹ The controlled experiment results could be used to estimate accident reduction from reflectorized plates for the entire state.

Controlled experiments are, however, seldom possible. More often, models developed from the social, physical, or engineering sciences are used to estimate that change. For water resource projects, hydrological models can yield estimates of influences of reservoirs, canals, channelization, etc., on water flows and levels. From that information can be derived the effects on navigation, probability of flooding, water supply, and so on. Gravity models from economic analysis and marketing can indicate likely drawing power of various public facilities. Trip generation models can suggest traffic flows from transportation facility changes. Any model allows the analyst to apply experiments from other environments to predict the results of projects under consideration, so that these changes can be valued: they are the key to linking government inputs to government outputs. Hovey strongly presents the importance of models:

To analyze any program . . . requires a model, which describes the relationship between what we put into the activity (inputs) and what we expect to get out of it (outputs). Good models explain what exact relationships are, not just that a relationship exists . . . To require that the model be made explicit is one of the greatest potential contributions of systematic analysis to government. An explicit model can be studied, criticized, evaluated, and improved. Too often, decisions are made without explicit models. The result can never be better than if the model is explicit, it can frequently be worse.²⁰

When the project impact has been estimated, the worth of that impact must then be estimated. Such valuation permits comparison of project cost to project returns to establish whether the undertaking increases the net well-being of the region. Money values are used, not because of any glorification of money, but simply because exchange values provide a standard yardstick to compare how individuals value the project with how they value the resources used by that project. For example, one million tons of concrete applied to highway construction

¹⁹Charles B. Stoke, *Reflectorized License Plates: Do They Reduce Nighttime Rear-End Collision?* (Charlottesville: Virginia Highway Research Council, 1974). Drivers were not told and could not control the type of plates they received. The plates did not make a difference in the incidence of such collisions.

may prolong by one year the useful life of 5,000 automobiles: resources of one type are used to save resources of another. Will the community be better off with that use of its scarce resources? A direct comparison is impossible because units being measured (cars and concrete) aren't the same. Our only meaningful alternative is to estimate the relative value individuals place on cars and concrete: how much general purchasing power individuals are willing to give up to acquire each. Those purchasing power units provide the measuring standard.

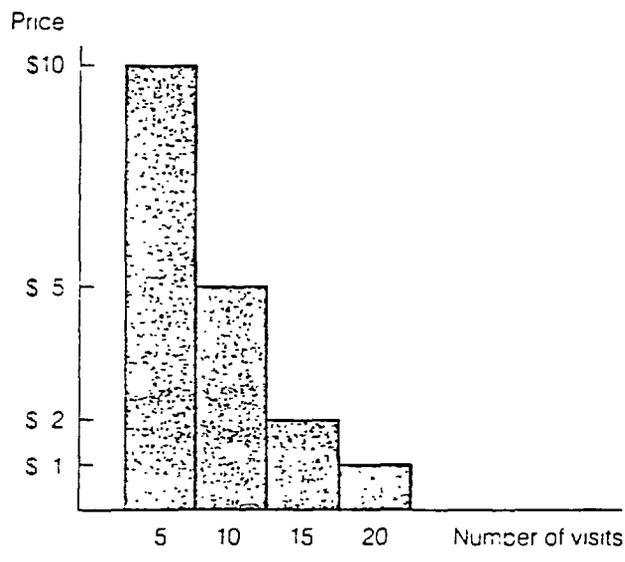
The particular valuation approach chosen depends on the project, but the task is always easiest when values can be connected to a private market. For instance, river navigation projects may reduce shipper costs: the estimated difference between cost of river shipment and that of the cheapest available alternative can indicate project value of an increased volume of shipping. The value of employment training projects can be estimated from differences in anticipated pre- and post-project incomes of trainees, allowing for differences in employment prospects.²¹ Many capital expenditure items purchased by governments may reduce operating cost, the primary benefits in those instances.

For some projects, however, project outputs are not linked to goods or services sold in private markets: the output is desired for its own sake (relaxation in a city park), not because it contributes to another production process.²² When the product or service is of this type, or when prices of marketed commodities change as a result of the project, a different approach is used. That is the estimation of consumer's surplus—the difference between the maximum price consumers would willingly pay for given amounts of a commodity and the price that the market demands for the commodity (which would be zero for public services provided at no direct charge). The underlying logic of the consumer surplus approach is relatively simple, although its application is anything but simple: points along an individual's demand curve for a product or service represent the value that the person places on particular amounts of the product in question. The individual would voluntarily exchange any amount up to the level on the demand curve rather than not have the product. He will not pay more, so the price on the curve represents the individual's valuation of the product. Refer to Figure 5-3, a representation of an individual's demand for visits to a park: for 10 visits to the park, the maximum that individual would pay is \$5. If the price actually charged is above \$5, the individual would visit fewer times (if at all); if the price is below \$5, the individual receives a consumer sur-

²¹Joe N. Nay et al., *Benefits and Costs of Manpower Training Programs: A Synthesis of Previous Studies with Reservations and Recommendations* (Washington, D.C.: Urban Institute, 1973).

²²Economists distinguish these as final products and intermediate products. See Richard A. Musgrave, "Cost-Benefit Analysis and the Theory of Public Finance," *Journal of Economic Literature* 7 (September 1969).

FIGURE 5-3 Individual Demand for a Park



plus—he receives the service at less than the price he would have willingly paid. Consumer surplus then equals the difference between the maximum price the individual would have paid less the price he actually pays multiplied by the number of units purchased. If the price were zero (the park has no admission charge), the total consumer surplus here would equal \$90, computed by: $(\$10 \times 5) + (\$5 \times 5) + (\$2 \times 5) + (\$1 \times 5)$. That is the entire area under the demand curve for the service.

Public services are seldom sold, so how is it possible to consider quantities demanded as a function of price? The demand curves are constructed by recognizing that implicit prices have to be paid to use most free services. Thus, individuals must pay transportation cost to use even a free facility—they bear the cost of getting from where they live to where the facility is. This cost is the implicit price; analysis of user patterns allows estimation of a demand curve. Use (quantity demanded) usually is greater by those who are closest to the facility (travel cost, or implicit price, is lower), following the configuration of a conventional demand curve.²³ The approach is not without its problems, but it really is the only feasible technique for that class of public services.

Estimation of Project Costs

An estimate of the resource cost of the project includes construction cost and operating cost for the life of the project. Obviously the

²³An interesting application of the technique to estimate benefits from visits to historical sites using the consumer surplus approach is Richard J. Cirre, *Estimating User Benefits from Historic Sites and Museums* (Ithaca, N.Y.: Program in Urban and Regional Studies Cornell University 1977).

preparation of these estimates requires the close cooperation of engineers and accountants skilled in costing, particularly if heavy public works facilities are involved. The analyst must recognize, however, that the important cost for society is the opportunity cost of the resources used in the project: "By the opportunity cost of a decision is meant the sacrifice of alternatives required by that decision . . . [O]pportunity costs require the measurement of sacrifices. If a decision involves no sacrifices, it is cost free."²⁴ The cost that matters for decisions is the value of paths not taken; that is the true cost of any decision. That complication can produce three types of adjustments to cost estimates based initially on resource purchase prices. First, ordinary project cost estimates included only private or internal costs. Many public projects, however, can create undesirable effects on others, or negative externalities. Examples include the damage done to surrounding properties by pollutants produced by a municipal incinerator or the traffic delays created when streets are blocked by construction of a government office building. These are costs inflicted upon parties outside the market transaction, but they are just as real to society as wages or payment for construction materials. These adjustments are made using the same indirect methods applied in benefit estimation—these impacts are, logically, negative social benefits.

Second, adjustments are appropriate if the project uses completely unemployed resources or resources for which there is no alternative use. If such is the case, there is nothing sacrificed in consuming those resources in the project being considered. Thus, the actual social opportunity cost of the resource to the project is zero, not the financial cost involved in paying the resource's owner. For that reason, it can be sensible to undertake programs in areas with massive unemployment when that program ordinarily would not be economically justifiable: putting the idle resources to work adds a desired product without the loss of any other product.

Finally, many public projects use property already owned by the government. Property acquisition brings no out-of-pocket cost; when sites for a new highway, incinerator, and so forth, are being compared, the site using public property has lowest financial cost. The real social cost of that site for the proposed project is the site's value in its existing (or other possible) use because that is what the community loses if the site is selected for the new use. There is no justification for valuing already-owned properties at zero. Furthermore, the amount paid for the resource (its historical cost) may not be a usable guide. For example, if a municipality invests \$1.5 million in a new incineration plant

²⁴William Warren Haynes, *Managerial Economics* (Plano, Tex : Business Publications,

that will not burn the refuse mix generated by the city, the value of the plant clearly is less than \$1.5 million and, unless there is some salvage value for the facility, approximates zero. Decisions are appropriately based on opportunity costs, not historical costs.

Selection of a Discount Rate

The costs and benefits of most public projects, particularly those long-life, high-price projects proposed in a capital budget, do not occur in any single year. More often than not, an initial capital expenditure is made in one year and both operating cost and program returns accrue over a long project life. In that event, special attention must be given the timing of the flows, recognizing that a return available only at some point in the future has less value than an equal return available now.

The approach for comparing such impacts in personal, business, and public finance is discounting, a process of converting a stream of returns or costs incurred over time to a single present value. The present value takes account of both the absolute size and the timing of impacts of a proposed action.

Why is a payment of \$100 received at the end of one year not equivalent to \$100 received now? If inflation's erosion of purchasing power and the uncertainty of the future seem to make the answer obvious, assume that the \$100 is certain to be received and has been adjusted for price level changes: the reason for discounting is related neither to inflation nor to uncertainty. The reason is simply that the \$100 available now can yield a flow of valuable services (or interest) through the year. At the end of the year, the holder could have \$100 plus the flow received from use of the \$100 during the year. Therefore, \$100 now has greater value than does \$100 received at the end of the year. Furthermore, as the date of receipt is more distant, the present value of a given dollar amount is lower: the flow of services between now and then would be greater.

While the principle of time value applies to any resource or service, the mechanics most often are done using market exchange equivalents (dollar values) of those returns and the analysis uses investment for interest as the earned service flow. Thus, \$X available now (the principal) will become \$X plus \$X times the rate of interest (the principal plus interest earned on that principal) at the end of one year. The mechanics of discounting are easier to understand after working through the more familiar process of compounding. Suppose the rate of interest is 10 percent: if \$1,000 is invested today, it will accumulate to \$1,100 at the end of the year. Thus

$$\$1,100 = \$1,000 + (\$1,000 \times 0.10)$$

or

Amount at end of year = Original principal + Interest earned

Algebraically, if r = the rate of interest, PV = the present amount, and FV_1 = the amount at the end of a year, then

$$FV_1 = PV + PV r \text{ or } FV_1 = PV(1 + r)$$

FV_1 equals the original principal (PV) plus accumulated interest ($PV r$).

Many policy and management questions involve multiple-year decisions—where the returns are permitted to compound over several years. In other words, the principal plus accumulated interest is reinvested and allowed to accumulate. An example would be calculation of the amount to which \$1,000 would accumulate at the end of five years with 10 percent annual interest. Annual account balances are shown in Table 5-1. Obviously there must be an easier way to compute compound interest than going through all the year-end computations. Using the symbols previously introduced for values now and values at the end of a year,

$$FV_1 = PV(1 + .10) = PV(1.10)$$

At the end of the second year, the account balance would increase from interest earned:

$$FV_2 = FV_1(1.10) = PV(1.10)(1.10) = PV(1.10)^2$$

The same increase from interest earned occurs at the end of the third year:

$$FV_3 = FV_2(1.10) = \{[PV(1.10)](1.10)\}(1.10) = PV(1.10)^3$$

For the fourth year:

$$FV_4 = FV_3(1.10) = (\{[PV(1.10)](1.10)\}(1.10))(1.10) = PV(1.10)^4$$

The same process applies, regardless of the number of years. In general, if PV = the present amount, r = the appropriate interest rate, n = the number of periods of compounding, and FV_n = the account balance at the end of the periods,

$$FV_n = PV(1 + r)^n$$

From the previous example,²⁵

$$FV_n = 1,000(1.10)^5 = 1,610.51$$

Interest often compounds more frequently than once a year. The compounding formula can easily be adjusted to allow for semiannual,

²⁵For electronic calculators, use the y^x key: $y = 1.10$ and $x = 5$. Thus, $(1.10)^5 = 1.61051$.

TABLE 5-1

Initial deposit, \$1,000	Interest Earned (interest rate × previous balance)	Account Balance
End of year:		
1	\$100.00	\$1,100.00
2	110.00	1,210.00
3	121.00	1,331.00
4	133.10	1,464.10
5	146.41	1,610.51

quarterly, or any other regular scheme of paying interest. For example, suppose interest is paid twice a year. With an annual rate of 10 percent, that system would mean that 5 percent interest is paid for the first half of the year and 5 percent is paid for the second half year. Thus, principal plus interest amounts at the end of the half years would be

$$FV_1 = PV(1.05) \text{ (Balance at end of one half year)}$$

$$FV_2 = PV(1.05)^2 \text{ (Balance at end of two half years)}$$

$$FV_3 = PV(1.05)^3 \text{ (Balance at end of three half years)}$$

and so on. Thus, at the end of n years,

$$FV_n = PV(1.05)^{2n}$$

In general, if interest is added x times per year, and other definitions are as before,

$$FV_n = PV\left(1 + \frac{r}{x}\right)^{nx}$$

Discounting simply adjusts sums to be received in the future to their present-value equivalent, the amount which will accumulate to that future sum if invested at prevailing interest rates. Recall that FV , the accumulated balance at the end of one year, equals $PV(1 + r)$, the balance at the start of the year multiplied by one plus the rate of interest. That formula can be arranged to become

$$PV = \frac{FV}{(1 + r)}$$

The amount PV invested at interest rate r will grow to FV , at the end of the year.

Suppose \$1,000 will be received at the end of one year ($FV = 1,000$): if the interest rate that could be earned is 10 percent, what sum today (PV) would accumulate to \$1,000 at the end of the year? That present value emerges from operation of the present-value formula:

$$PV = \$1,000 / (1 + 0.10) = \$909.09$$

That means that \$909.09 now plus 10 percent interest earned for one year ($\$909.09 \times 0.10$) equals \$1,000: the present-value equivalent of \$1,000 received at the end of one year when the prevailing interest rate available is 10 percent is \$909.09. That prevailing rate is called the discount rate.

What happens if the return is received more than one year into the future? The same logic of adjusting for interest which could have been earned still applies, but the computations look messier because the interest earnings would compound. In other words, interest earned during the first year would be able to earn interest in the second year, and so on through the years. The general formula for compounding, $FV_n = PV(1 + r)^n$, may be rearranged in the same way that the single-year compounding formula was to produce the general present-value formula:

$$PV = \frac{FV_n}{(1 + r)^n}$$

where PV = the present-value equivalent, FV_n = a value received in the future, r is the discount rate, and n is the number of years into the future that the sum is received. For example, \$800 received 10 years in the future, assuming a 10 percent discount rate, would have a present value of \$308.43 (or $800 / (1 + r)^n$).

In many situations, the income stream to be discounted may be constant for several years. For instance, a new maintenance garage might reduce cost by \$20,000 per year for 25 years and that cost saving is to be compared with the construction cost of the garage. The flow in each year could be discounted back to the present; a quicker approach entails use of an annuity formula to compute the present value of the income stream in a single computation. If S equals the amount of the annual flow and other variables are as previously defined,

$$PV = \frac{S}{r} \left[1 - \left\{ \frac{1}{1 + r} \right\}^n \right]$$

All rules about more frequent compounding (quarterly, semiannually, monthly) apply in this formula as well. In the example here, the present value of those garage cost savings if $r = 10\%$ would equal

$$PV = \frac{20,000}{0.10} \left[1 - \left\{ \frac{1}{1.1} \right\}^{25} \right] = \$181,540.80$$

This formula will be used later in determination of bond prices (Chapter 13).²⁶

The choice of discount rate has an important impact on the present value of a project. Suppose a project has construction cost of \$10,000

²⁶This formula also can be used to determine the level mortgage payment (principal and interest) needed to pay off a loan and is often used by engineers to convert a capital cost into an annual cost equivalent (annualization). An example of the former: suppose an

TABLE 5-2 The Impact of Discount Rates on Project Present Values

Year	Cost Outlay	Benefit Received	Present Value of Benefits, Alternative Discount Rates		
			8 Percent	10 Percent	15 Percent
1	\$10,000	\$1,500	1,389	1,364	1,304
2	—	1,500	1,286	1,240	1,134
3	—	1,500	1,191	1,127	986
4	—	1,500	1,103	1,025	858
5	—	1,500	1,021	931	746
6	—	1,500	945	847	648
7	—	1,500	875	770	564
8	—	1,500	810	700	490
9	—	1,500	750	636	426
10	—	1,500	695	578	371
Present value total	\$10,000		10,065	9,218	7,527

and no operating cost. Its benefits of \$1,500 per year start at the end of the year and continue for nine years. The project ends with no salvage values. Table 5-2 summarizes the project data and computes present values, using different discount rates. An 8 percent discount rate shows the project to produce a return slightly greater than its cost, a 10 percent discount rate shows the project to be slightly more costly than its value, and a 15 percent rate shows the project to have substantially higher cost than its value. The discount rate selected clearly influences the economic evaluation of the project.

There is, however, no single discount rate which is immediately obvious as the appropriate rate for analysis—market imperfections and differences in risk cause a broad spectrum of interest rates in the economy. Several candidates have, however, been proposed for such use. Two important candidates proposed for such use are the cost of borrowed funds to the government (the interest rate the government must pay) and the opportunity cost of displaced private activity (the return that private resources could earn). There are conditions under which either may be appropriate.

The cost of borrowed money provides the closest analogue to private project analysis—it is an interest rate which, presumably, must be paid by a borrower. Because most public programs are financed at least ultimately by tax revenues, use of the rate at which a government can

\$50,000 mortgage is taken for 20 years at a 12 percent interest rate. The monthly payment would be computed as follows:

$$50,000 = \frac{X}{0.12} \left[1 - \left\{ \frac{1}{1 + \frac{0.12}{12}} \right\}^{20 \times 12} \right]$$

$$50,000 = \frac{X}{0.01} \left[1 - \left\{ \frac{1}{1.01} \right\}^{240} \right]$$

91

borrow would not direct resources to their best-yield uses because absence of default risk on (federal) government debt makes that rate abnormally low. Allocation using that rate would pull resources away from higher-yielding private activities to prospectively lower-yield public use. For state and local government decisions, the borrowing rate could be particularly misleading because the exclusion of this interest from the federal income tax allows these governments to borrow at much below the appropriate market rate.²⁷ Public authorities which generate their revenue from sales of product or service might use that rate, as that does estimate the market attitude toward the prospects of the enterprise, but even here the interest excluded from income taxes complicates the analysis. The borrowing rate is generally not a good test for a social discount rate.

The return which could have been achieved in displaced private spending is generally more appropriate for the logic of benefit-cost analysis, an analysis aimed at discovering actions which increase the welfare of the community. It is a rate which the analyst must estimate—there is no defined interest rate being paid that can be looked up. Baumol lucidly expresses the essential argument:

If the resources in question produce a rate of return in the private sector which society evaluates at r percent, then the resources should be transferred to the public project if that project yields a return greater than r percent. They should be left in private hands if their potential earnings in the proposed government investment is less than r percent.²⁸

The problem is to estimate what the rate of return would have been on these displaced resources, because that is the opportunity cost a public project must exceed if it is not to misallocate resources of the community. In general, this rate can be estimated according to the formula:

$$P = k_1r_1 + k_2r_2 + \dots + k_nr_n$$

where P = rate of return on displaced resources (the project discount rate), r = return on investment in a particular private sector, k = fraction of project cost extracted from a particular sector (usually the percentage of total taxes collected from it), and n = the number of private sectors with displaced resources. This weighted average provides a workable estimate of the private opportunity cost of the displaced resources and the resulting discount rate is applied to the estimated benefit and cost flows.

²⁷An individual in the 30 percent federal tax bracket would receive the same after-tax rate of return on a taxed corporate bond yielding 15 percent or an untaxed municipal bond yielding 10.5 percent.

²⁸William J. Baumol, "On the Discount Rate for Public Projects," in *Public Expendi-*

Decision Criteria

The final stage in project analysis applies a decision criterion to the discounted cost and return flows to summarize the economic case for the project. The summarization can be either to identify whether a project is economically justifiable or to establish rankings among projects to be fitted into a limited budget. Two criteria often used are the benefit-cost ratio (the present value of benefits divided by the present value of costs) and the net present value of the project (the present value of benefits less the present value of costs). If the ratio exceeds 1 or if the net present value is positive, the project passes the test of economic efficiency: resource use for the project will increase economic well-being because alternative use of those resource will produce a lower return for the community. Application of these criteria will ignore politics, desires for wealth redistribution, regional problems, and other side concerns, but both will capture the economics of the project.

Two additional measures sometimes proposed should be mentioned briefly. These are the internal rate of return and the payback period. The payback period method divides the estimated net annual flow of project returns into the capital cost of the project to obtain the number of years it would take to fully recover (pay back) the capital cost. Thus, if \$2,000 is the net annual return from a project with a capital cost of \$8,000 the payback period is four years. The shorter the period, the more attractive the project. This measure is defective because it ignores both the time profile of returns (proceeds available only late in project life are valued equal to earlier returns) and proceeds after the payback point. For example, consider the projects in Table 5-3. By payback-period reasoning, the project ranks (best to worst) would be A, B, C: if a discount rate of 10 percent were appropriate, the net present value of A = -909; of B = -909; and of C = +1,292. Payback periods are simply not reliable as a project guide.

The internal rate-of-return method "is to find a rate of interest that will make the present value of the cash proceeds expected from an investment equal to the present value of the cash outlays required by the

TABLE 5-3

Project	Capital Cost	Annual Net Benefits (end of year)			Payback Period
		Year 1	Year 2	Year 3	
A	10,000	10,000			1 year
B	10,000	9,000	1,100		1+ years
C	10,000	3,000	4,000	7,000	3+ years

investment."²⁹ That return is compared with the discount rate: the project passes the economic efficiency test if its rate of return is higher than the discount rate. The present value methods are "simpler, safer, easier, and more direct"³⁰ because of the adaptability of multiple discount rates during investment life, the problem of multiple internal rates of return which can emerge in computation, and the need for additional tests to determine the validity of a computed rate of return. If conditions are right, however, internal rate of return will give the same results as present-value (or benefit-cost ratio) computations.

Project analysis may require not just an evaluation of the economics of a number of projects but also selection of particular projects from several alternatives. Two ranking indexes are available: rank by ratios of benefit to cost or by net present value.³¹ Project rankings are often the same with either criteria, but sometimes—especially when project sizes are substantially different—the ranks are substantially different. Which ranking should apply: that produced by net present values or the ratio of benefit to cost?

Table 5-4 presents the discounted cost and benefit data for two capital projects. If \$500 is to be budgeted, should project X or project Z be undertaken? Project Z has a higher net present value while project X has the higher benefit/cost ratio. Each criterion supposes particular facts about the projects. Ranking by the ratio assumes that either project can be increased in any proportion without changing the return relationships. In the present comparison, ranking by ratio presumes that project X can be expanded three and one third times its present size at the same benefit rate (to \$667), yielding a net present value of \$167. That expansion must be technically and economically possible if ratios are the guide to the decision. Ranking by net present value presumes that the alternative investment streams are the size indicated, without the possibility of increase or decrease with returns constant.

In many situations, of course, neither presumption is met entirely. When such is the case, the decision must rely on comparison of present value of benefits from the use of available funds in feasible combinations of all project sizes. If the concern is with indication of economically feasible projects, not with allocation within a fixed budget, either method will be proved satisfactory: if net present value is positive, the benefit-cost ratio will be greater than 1. Conflict emerges only with rankings.

²⁹Harold Bierman, Jr., and Seymour Smidt, *The Capital Budgeting Decision* (New York: Macmillan, 1975), p. 23.

³⁰*Ibid.*, p. 57.

³¹The ratio of excess benefit to cost (benefit minus cost divided by cost) provides no additional information, as project ranks are the same as with the benefit-cost ratio: $B.C = [(B - C) / C] + 1$.

TABLE 5-4 Projects with Ranking Criteria Conflict

Project	Cost	Benefit	Net Present Value	Benefit/Cost Ratio
Z	\$500	\$600	\$100	1.20
X	150	200	50	1.33

Some Special Problems

Multiple objectives. Benefit-cost analysis provides information about the economic impact of projects. Overall economic impacts may not, however, be the sole or even the most important objective of some programs, particularly those concerned with redistribution of income in society. If redistribution is important, benefits received by some groups in society will be more important than benefits received by others. Market values will not measure this objective, so benefit values would need explicit adjustment to encompass redistribution concerns.

Normal benefit-cost analysis accepts all portions of the economy as equal; gaining and losing groups are not considered. It accepts the "hypothetical compensation" criterion of theoretical welfare economics: a public decision will be regarded as sound if those gaining from a public action receive sufficient benefits to compensate any losses, with some surplus gain remaining.³² The principle ignores distribution of gains and losses across society and can be defended by these arguments: (1) that changes resulting to income distributions can be viewed as negligible,³³ (2) that public investment is not a proper tool for redistributive change because other fiscal policies are superior and can easily correct for any investment-related maldistribution; or (3) that many projects over time will have benefits randomly distributed, causing the overall effect to "average out" at no redistributive change. On these grounds, distribution effects may be ignored with some theoretical justification. The view has been growing, however, that such treatment assumes away too many issues.

Two general techniques have emerged to deal with this distributional concern. Some analysts have allowed for distribution effects by weighting benefits by a measure of the societal importance of the recipient. Values received by meritorious groups (those society wants to help) count more than values received by others. Selection of weights is obviously a problem. Weisbrod has applied weights implied in past public project decisions that have not followed strict benefit-cost

³²J. G. Head, "The Welfare Foundations of Public Finance Theory," *Rivista di diritto finanziario e scienza della finanze* 24 (September 1965); pp. 379-428.

³³Otto Eckstein, *Water Resource Development* (Cambridge, Mass.: Harvard University Press, 1958), pp. 36-37.

ranks.³⁴ This approach does not, however, attack the problem of how the distribution ought to be changed, but would weight analysis in the historical pattern. Besides, the pattern may measure clout of congressional delegates, not social goals. Krutilla and Eckstein approach the problem by using marginal rates of federal taxation as weights, presuming that these rates roughly measure the importance of redistribution to society.³⁵ The technique does focus directly on income distribution, but it, too, has political pressure problems. Furthermore, it ignores the difference between statutory rates (those in tax law) and effective rates (those applicable after loophole). Other approaches would apply specific weights supplied by the analyst. All bend the general rule that the analyst be an impartial observer in the analytic process. Decision makers may not recognize (or accept) the value system assumed by the analyst.

An alternative, the display technique favored by McKean, would supplement general cost and benefit totals with a tabulation of how costs and benefits are divided among the population.³⁶ Many distributions could be important: income, age, race, sex, geographic area, etc. By providing such a display, the analyst need not weight the social importance of groups. Decision makers could supply their own weights to each recipient group as desired. The number and type of displays provided would not likely be the same for all projects. If the goal of analysis is to provide information for decision makers and consumers and not to yield conclusive, social-maximizing decisions, such displays seem a prerequisite.

Valuing life-saving projects. A sticky problem occurs when public projects seek to reduce the loss of human life, as with transportation safety, cancer research, nutrition education, or fire protection. Decisions can save or endanger lives: life or death can rest on government allocation of resources to particular projects. Those decisions are distasteful, but they have been and will continue to be made. The important question is not whether a value has been placed on the saving of human life. The real question is whether decision makers know what they are assuming about that value. Any set of decisions that denies resources to activities which have a life-saving element have implicitly

³⁴Burton A. Weisbrod, "Income Redistribution Effects and Benefit-Cost Analysis," in *Problems in Public Expenditure Analysis*, ed. Samuel B. Chase (Washington, D.C.: Brookings Institution, 1966).

³⁵John V. Krutilla and Otto Eckstein, *Multiple-Purpose River Development* (Baltimore: Johns Hopkins Press, 1958).

³⁶Roland McKean suggests the importance of using exhibits to indicate the impact of projects on the distribution of wealth, and demonstrates its use in water resource project evaluation: *Efficiency in Government through Systems Analysis* (New York: John Wiley & Sons, 1953), pp. 131-33, 208, 242.

placed a value on life: they imply that the value is less than the cost of the rejected activity. Is that implicit value reasonable?³⁷

A number of methods, none flawless but some better than others, have been proposed to value life saving. Historically, the first was average life insurance face values outstanding, under the logic that this was a value on loss of life that individuals placed on themselves. The obvious problems are that individuals buy life insurance for varied motives, including some—for example, forced saving—which have nothing to do with death potential, and that individual holdings vary substantially by family characteristics. These influences render insurance values generally inappropriate for this use.

A second technique, the earnings loss method, views the human as something equivalent to a machine. Thus, the value of a life saved is estimated at the present value of lifetime earnings less subsistence cost through the work career of the individual. That, it is alleged, equals the contribution of the individual to the economy and is the value of a life saved. There are questions both about what earning pattern to use and about whether that narrow production view truly gauges the social worth of an individual; this approach is seldom used in benefit-cost analysis today.³⁸ However, the judicial system does use this approach in wrongful-death cases: one element in awards to families is estimated net lifetime earnings of the individual killed.

The third technique uses evidence generated by labor-market response to higher risk of death across occupations. A number of occupations (logging, off-shore drilling, etc.) have greater death risks than other occupations with similar skills. The wage premiums necessary to recruit workers to that work provides an estimate of the value of life in the labor market. Thus, life-saving values emerge directly from the choices of individuals. There are some logical questions about the method—for one, the values may be artificially low because those jobs apparently appeal to individuals whose attitudes toward risk are different from those of others (they may actually enjoy extreme danger)—but it apparently gives the soundest estimates generally available.³⁹

Government decisions do generate implicit values for life saving. That valuation cannot be avoided. Benefit-cost analysis must ensure that these valuations are conscious and consistent. It can hope for little else.

³⁷A questionnaire to 435 adult Americans asked the question "How much, in dollars, is the average human life worth?" The average response was \$28,000. [Leonard C. Lewin, "Ethical Aptitude Test," *Harpers* 253 (October 1976), p. 21.] The methods examined here have substantially stronger logical basis than this.

³⁸A close variant is reportedly used in military pilot safety decisions: the value used is the cost of training a replacement. Safety feature costs are balanced against that value estimate.

³⁹W. K. Viscusi "Wealth Effects and Earnings Premiums for Job Hazards," *Review of Economics and Statistics* 60 (August, 1978): pp. 403-16.

A Final Note on Benefit-Cost Analysis

Benefit-cost analysis can supply decision makers valuable information about government activities. The analysis can estimate whether a particular project improves the efficiency of resource allocation. Supplemental displays, where relevant, can indicate its distributional impact across income classes, regions, races, sexes, and so forth, depending on the classifications deemed relevant.

The relationships and variables in the computations are estimates based on assumptions made by the analyst. Those making project choices must know what those assumptions are and how the analysis would differ with other reasonable assumptions. At minimum, the public decision maker must comprehend the structure of benefit-cost analysis to safeguard against deception from self-interested parties.

Public choices are political. No computerized, sterile analysis can substitute. Benefit-cost analysis is, however, an invaluable information tool and merits expansion as such, in spite of its possible weaknesses and potential misuses. As John Krutilla has observed:

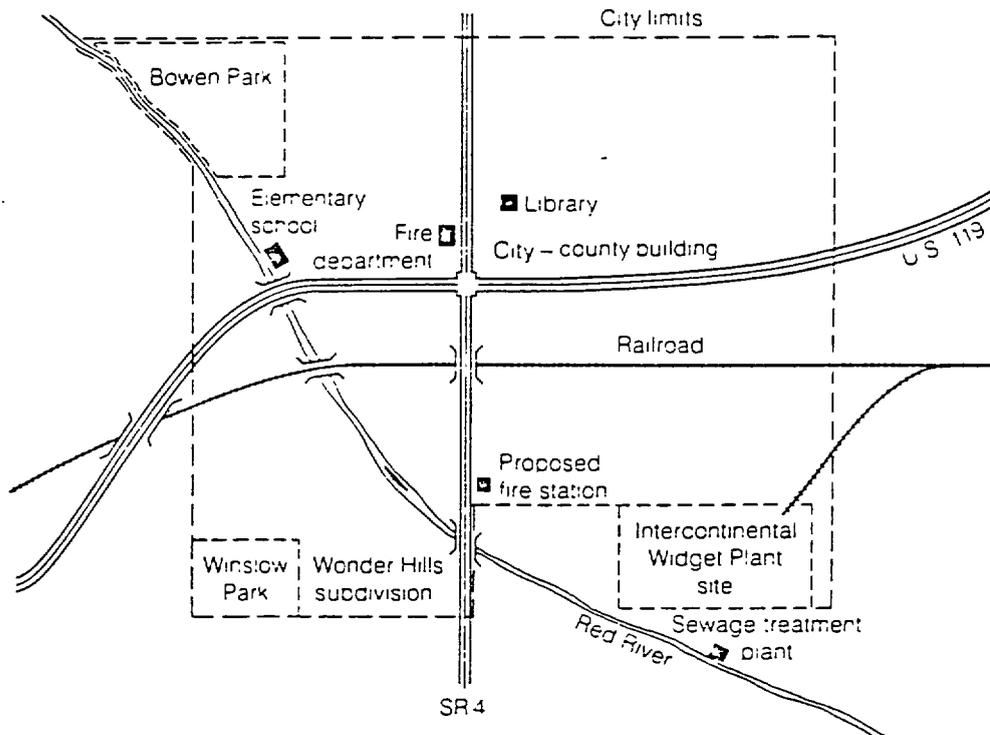
Since the alternative is not to retire to inactivity but, rather, to reach decisions in the absence of analysis, we may take some comfort from the belief that thinking systematically about problems and basing decisions on such analysis are likely to produce consequences superior to those that would result from purely random behavior.⁴⁰

Questions and Exercises

1. Roachdale has a population of 22,000 more or less. Several of its important features appear on the map. The city eagerly awaits the full operation of the Intercontinental Widget Plant early in 19X3. While the plant has few employees now, it will have a work force of around 900. The plant has caused a shift in city population to the south. Many people are moving to the Wonder Hills subdivision (45 percent developed now), although a good number are located along SR4 outside of town.

The data presented here, along with departmental project proposals, should be used to prepare a capital improvement program for the years 19X0 to 19X4 and a capital budget for 19X0. Financial conditions suggest that the city will be unable to pay more than \$900,000 for capital investment in any year, so one part of the exercise requires that priority criteria be established if all requests cannot be included in the budget.

⁴⁰John Krutilla, "Welfare Aspects of Benefit-Cost Analysis," *Journal of Political Economy*, July 1961, p. 234.



The city has two special capital asset problems. First, the main sanitary sewer at Westside Elementary School near the Red River has suffered structural failure and must be replaced. Second, the SR4 bridge over Red River is unsafe. The bridge replacement will take two years. During the first year, traffic will have to be detoured. The state will pay 90 percent of the bridge cost.

Projects Proposed:

These projects have been proposed by city department heads.

Streets, roads, and bridges:

SR4 bridge replacement—19X0, \$350,000; 19X1, \$250,000 (costs are totals).

Street upgrading, Wonder Hills subdivision—19X0, \$600,000; 19X1, \$50,000; 19X2, \$20,000.

Street sign replacement—19X0 to 19X9, \$18,000 per year (high visibility, break-away signs).

Parks and recreation:

Bowen Park pool—19X0, \$300,000 (construction of new above-ground aluminum pool).

105

Winslow Park Recreation complex—19X1, \$25,000; 19X2, \$125,000; 19X3, \$300,000; 19X4, \$300,000; 19X5, \$85,000 (pool, ice skating rink, baseball diamonds).

Libraries:

Air-condition building—19X0, \$45,000; 19X1, \$20,000.

Water and sewer:

Water line upgrading, Wonder Hills—19X2, \$725,000.

Storm sewer installation, Wonder Hills—19X3, \$850,000.

Sanitary sewer replacement (structural failure)—19X0, \$150,000.

Fire department:

New fire substation—19X3, \$450,000; 19X4, \$65,000.

Fire equipment:

a. Pumper (main station)—19X0, \$25,000.

b. Pumper, hook and ladder (substation)—19X0, \$130,000.

2. My son informed me that a comic book I purchased for 10 cents in 1948 is worth \$55 today. What has been the average annual compound rate of return on that valuable asset? (See Chapter 2.)
3. Dr. Rubin has \$10,000 to invest for three years. Two banks offer an 8 percent interest rate, but bank A compounds quarterly and bank B compounds semiannually. To what value would his money grow in each of the two banks?
4. The Penn Central Railroad had not paid local taxes since 1969, under federal bankruptcy court protection. Some years later, the court required Penn Central to offer municipalities a choice of two payment options to clear this liability. (Penn Central, of course, has been absorbed by Conrail, so there were no future tax liabilities involved.) The choices were: (a) immediate payment of 44 percent of total liability or (b) immediate payment of 20 percent of the liability, 10 percent paid at the end of each of the next three years, and 50 percent paid at the end of 10 years. Which alternative would you recommend to a municipality and why?
5. "A logical estimate of the current opportunity cost to the community of destroying the Parris-Dunning House (a structure built in the early 1800s and lived in by an early governor of Indiana) for construction of a traffic corridor in Bloomington, Indiana, could be prepared by using the formula: $C_p = C_o (1 + r)^n$ where C_p = current opportunity cost, C_o = the original construction cost of the house, r = the appropriate interest rate available on investments over a period, and n = the number of years between construction and the present." Do you agree? Explain.

6. The irrigation system a farmer uses cost \$10,000 eight years ago. It will last another 25 years without additional investment. With that system, he produces crops valued at \$3,000 per year at a cost of \$1,000 per year. A new system would cost \$15,000 to install, but would increase production to \$7,000 per year. Operating cost would be \$2,500 per year. The farmer would have to refurbish the new system 12 years after installation at a cost of \$5,000. Assume that investment in the new system occurs at the start of the first year, that revenue and operating cost occur at the end of each year and do not change over the 25 years, and that both systems have a salvage value of \$1,000 at the end of 25 years. Assume a 10 percent discount rate. Should the farmer replace his existing system?

7. "When the Nuclear Regulatory Commission wanted to consolidate its 10 buildings in the Washington area into a single headquarters, the GSA (General Services Administration) calculated the annual rent required at \$15 million and the construction cost at \$113 million, or more than double what it would cost to build." (Monica Langley, "Government's Staggering Leasing Expense Stirs Debate on Whether to Rent or Buy," *The Wall Street Journal*, September 4, 1982.) Compute the net present value of the lease expense at a discount rate of 9.0 percent. Assume a 20-year building life. How does it compare with the cost of construction?

8. What problems appear in the following statements involving benefit-cost analysis?
 - a. A public power project uses a discount rate of 8.5 percent, the after-tax rate of return for electric utilities in the area.
 - b. Evaluation of a new municipal fire station uses a discount rate equal to the rate at which the city can borrow long-term funds.
 - c. Evaluation of a new four-lane highway to replace an older two-lane highway shows saved travel time for truckers and for private vehicles, the value of increased gasoline sales, and increased profits of trucking firms.
 - d. A cost-benefit analysis of removal of architectural barriers for the handicapped from commercial buildings produced these benefit estimates for a 202,000-square foot shopping center: Economic benefit during 50-year useful life of center (1975-2024) = \$4,537,700 cumulative gross revenues from leasable area. (This increase in gross revenue per year attributable to new accessibility to handicapped persons is calculated by multiplying gross revenues per year by the ratio of handicapped to nonhandicapped persons in the area. The estimate is based on gross revenue per leasable area experienced nationally in 1969, brought forward to 1975 by the rate of consumer price index increase, and extended

through the 50-year life of the building according to the compounded rate of growth in sales revenue experienced by community shopping centers, 1966 to 1969. A 7 percent discount rate is employed.)

- e. The Big Walnut Creek reservoir proposed for central Indiana has been estimated to cost \$92.4 million (land acquisition and preparation, dam, construction, etc.). A 1972 Task Force report indicated that total annual benefits from the reservoir would exceed total annualized costs by \$2.9 million. A committee of area farmers, using 1973 production figures, calculated that 16,000 acres of cropland, pasture, and woodland in the "reservoir area" would net \$3.4 million annually. An opponent of the dam declared: "This is a beautiful area. It should be preserved—especially if farmland is producing more than reservoir benefits."

9. *The Chronicle of Higher Education** reported that the Kent State University athletic and alumni associations, in an effort to stimulate attendance at its homecoming football game, had sponsored an appearance at the game by the Dallas Cowboy Cheerleaders. For that game, 21,053 tickets were sold, compared to 7,186 the year before. A letter to *The Chronicle* editor sometime later questioned the sexist overtones of the promotion and wondered whether the event had even been profitable.

"*The Chronicle* article did not say whether revenue from the 52 percent increase in ticket sales offset the cost of bringing 32 cheerleaders from Dallas," a cost which the writer estimated to be about \$13,000. An official of the University provided information that the athletic department paid \$5,000 toward the travel expenses, with another \$5,000 provided by outside donors. Further, gate receipts were \$23,902. Another letter to the editor, six weeks later, provided a "rudimentary" cost-benefit analysis:

If one makes the assumption that the 52 percent increase in ticket sales represented a 52 percent increase in dollars from ticket sales, and the university realized \$23,902 in gate receipts at the game, it is simple to conclude that previous gate receipts amounted to \$15,725.

Since the Dallas Cowboy Cheerleaders cost a total of \$10,000, \$5,000 of which was paid by the athletic department and \$5,000 provided by outside donors, a total of $(\$10,000 - [23,902 - 15,725]) = \$1,823$ was lost on the stunt.

Now, it's true that the university only paid \$5,000 to recoup \$8,177 in gate receipts, but they may also have otherwise been able to use the outside donation for some other (more educational) purpose, and thus would have been better off soliciting the funds for some other endeavor.

*Material from *The Chronicle of Higher Education*, October 21, 1981; December 9,

Questions:

- a. How does this analysis differ from cost-benefit analysis?
- b. Rework the analysis of financial effect, making any necessary corrections and taking full account of the principle of opportunity cost.

Cases for Discussion

A The federal government has no formal capital budget and, as discussed earlier, may well not need one. Federal agencies do, however, have substantial capital assets and do need some systematic method for managing that capital. The following selection examines capital investment in four federal agencies—the U.S. Postal Service, the General Services Administration, the Veterans Administration, and the Corps of Engineers. Although dramatically different in services rendered, all have significant capital investment.

The material is excerpted from a General Accounting Office report. Not only is it a useful case study of capital acquisition practices in four federal agencies, but it also nicely illustrates the work done by the GAO.

Consider These Questions

1. *Do the agencies use capital budgeting as described in the chapter?*
2. *What agency does the best job of managing its capital investments? Why?*
3. *How do funding mechanisms influence the process? Should they?*

General Accounting Office Report

The U.S. Postal Service, the General Services Administration, the Veterans Administration, and the Corps of Engineers (civil works) invest directly in capital assets, which means they acquire and manage federally owned physical capital. Organizations (whether they are federal, state, or local governments or private industry) possess certain

TABLE 1

<i>Element</i>	<i>Does element enhance capital investment program?</i>			
	<i>USPS</i>	<i>GSA</i>	<i>VA</i>	<i>CORPS</i>
Agency management attitude enhances long-term capital investment.	Yes	No	Yes	Yes
Agency prepares long-term capital investment plan.	Yes	No	Yes	Yes ^a
Congressional authorization process encourages planning for capital acquisition.	Yes ^b	No	Yes	No
Agency has sufficient funds to execute capital program.	Yes	No	Yes ^c	Yes ^c
Agency controls and monitors capital project execution.	Yes	Yes	Yes	Yes
Agency uses economic analyses to justify projects.	Yes	Yes ^d	Yes ^e	Yes
Agency performs postcompletion study to determine if project accomplished its objectives.	Yes	No	Yes	No

^aCorps annually prepares a five-year investment program that identifies projects likely to be started during the next five years, given probable funding constraints. The Corps has the capability of formulating a range of alternative five-year investment programs responsive to alternative funding levels.

^bThe Congress has granted the Postal Service broad authority over capital investments. The authorizing committees do not participate in the selection of projects.

^cSubject to appropriated amounts.

^dAnalysis focuses on identifying the least costly way of meeting a need.

^eAnalysis focuses on demographics and identifying the least costly way of meeting a need.

elements that determine the success of their capital investment process. The elements that can enhance or hamper successful capital budgeting in the four agencies discussed in this chapter are shown in Table 1.

Of the four federal agencies discussed in this chapter, we believe that the Postal Service is the closest to what we have defined as a successful organization; however, we are not advocating that its flexibility (off-budget status and freedom from congressional authorization of capital projects) be extended to the other federal agencies. The Postal Service is unique among the agencies we examined in that it operates like a business, selling well-defined services to the public. We cite it as an organization with a capital budgeting process that has many desirable planning, budgeting, and control features that could be readily adapted by other federal agencies.

Although the Postal Service has many good capital budgeting features, it operates under a cloud of criticism because of capital invest-

was established.¹ Today, the Postal Service's capital investment process seems sound, but we are planning to review some of USPS' more recent investments and will report our findings to the Congress.

Postal Service management recognizes that capital assets are important to productivity. USPS is an independent, off-budget agency and is not required to seek congressional authorization for individual projects. This independence makes it relatively free of the Congress as a source of funds for its operating and capital investment programs. USPS does not have to compete with other federal programs for capital investment funds. The Postal Service prepares five-year capital investment plans and performs extensive economic and cost analyses before it funds capital investment projects. Once capital programs are under way, USPS tightly monitors and controls them for cost and time of completion. After a project is completed, a postaudit analysis is done to find out if proposed results were achieved and to identify any trends that need management attention or action.

In contrast to the Postal Service, GSA is subject to strong congressional control. It must first obtain authorization committee approval for each project over \$500,000 before it can request funds from congressional appropriations committees. While this requirement does not specifically restrict GSA planning, it does not encourage it either. GSA's funds are generated from user charges that finance lease payments, purchase contract payments, operations, repairs and alterations, program management, and new construction. Because of legal obligations (lease and purchase contract payments) and other priorities, new construction is the last budget item to receive funds, and the remaining funds are not sufficient to execute a successful capital investment program. Because funds are insufficient, and to keep the budget down, the executive branch has preferred to meet capital building needs by continuing GSA's leasing program. These factors do not encourage capital planning. The result is that GSA management does not have a long-term capital investment program at the moment. However, the agency is now developing a management planning system that sets forth long-range policies for public buildings acquisition, leasing, and major repair. The system is scheduled to be fully operational in early 1981. GSA says it is trying very hard to plan effectively for the future.

MANAGERS HAVE DIFFERENT VIEWS OF CAPITAL INVESTMENTS

In successful organizations, managers recognize and understand the long-term effects of capital investment. We found that managers in the four federal agencies had different views of capital investment. Postal Service officials place a very high priority on acquiring and maintaining physical capital. Corps officials told us that they consider

¹U.S. General Accounting Office, "Grim Outlook for the United States Postal Service's National Bulk Mail System" (GGD-78 59, May 16, 1978)

capital investment and operations and maintenance decisions separately. VA places highest priority on operations, which are to provide medical services to veterans, and a lower priority on nonrecurring maintenance. GSA, on the other hand, for years has been preoccupied with meeting its capital investment needs by leasing and rehabilitating existing space rather than constructing new federal buildings.

U.S. Postal Service

Postal Service management wants to keep costs low and increase productivity. Officials believe they can accomplish this only by mechanizing and improving their physical capital. Through its 11-member Board of Governors, USPS can make independent decisions about capital investment, and since the Congress has granted it borrowing authority (up to \$1.5 billion annually to finance capital acquisition), USPS management has sufficient funds to invest in needed capital assets.

Since 1972, the Postal Service has committed over \$4 billion to capital investment, an average of about \$532 million per year over the last eight years. This is considerably higher than the average of about \$200 million per year for the six years (1966 to 1971) before the Postal Service became an independent agency. (In constant 1972 dollars, these averages would be, respectively, about \$438 million and \$233 million.)

Corps of Engineers

Since the 1960s the Corps has planned and budgeted capital investments and operations and maintenance separately. The Congress appropriates these items separately, too; thus, funds cannot be transferred from one account to the other. Traditional budget practice has been to prepare separate justifications for capital investments and operations and maintenance, and to handle priorities separately as well. Corps officials said that the Congress generally specifies funding increases or decreases by category, and only if there were an unspecified, across-the-board, appropriation increase or decrease, would there be any choosing of priorities between capital and operations and maintenance.

Veterans Administration

Like the Corps of Engineers, VA's capital and operations and maintenance are planned, budgeted, and funded separately. Priorities within each account are handled separately and funds cannot be transferred from one account to the other.

To protect its priorities, VA sets a high priority on operations essential to its mission, which is to provide medical care to veterans, and a lower priority on nonrecurring maintenance. VA officials said they understand the long-term effects of capital investments and strive to bal-

112

ance construction projects by selecting those compatible with their mission.

General Services Administration

For years GSA has met its capital investment building needs primarily by leasing rather than by constructing new federal buildings. From 1968 to 1979 federally owned space decreased about 23 million square feet (from 160.4 million to 137.4 million), while leased space increased by 45.1 million square feet (from 48.2 million to 93.3 million). GSA continues to rely on leasing, despite the concerns of the House and Senate Committees on Appropriations and Public Works about the increasing amount and cost of leased space. The Committees have advocated direct federal construction as the most economical way to provide space for federal agencies. GSA said it would prefer to meet more space needs by new construction, but budgetary constraints have limited its ability to do so.

We have reported that from the standpoint of the budget for the Federal Buildings Fund, the best way to finance space is to build new buildings.² This means large initial cash outlays for construction, but over the long term less of the Fund's resources would be used and a larger budget surplus would result. A study of eight buildings showed that under the purchase-contract method it would take 27 years to recover their costs. Had these buildings been new construction, their costs would have been recovered in 14 years. Leasing buildings provides a positive cash flow from the start, but over the entire building life direct federal construction provides a larger positive cash flow than either leasing or purchase contracting.

For years GSA's management has not been committed to an aggressive capital investment program for several reasons: its current authorization process does not encourage long-range capital planning, it does not have enough funds to implement an effective capital program, and recently it has received adverse publicity about fraud and mismanagement. In addition, during the last five years the top management of GSA's Public Buildings Service has changed six times and the agency has been criticized by the Congress and the media about kickbacks to GSA employees from contractors.

GSA recognizes the shortcomings of its capital investment plan. It is currently developing a management planning system that delineates long-range policies for physical capital. According to GSA, the system proposes to closely link planning and budgeting and to provide information on facility planning, prospectus review, resources availability, and assessment of accomplishments against planned targets.

²U.S. General Accounting Office, "Costs and Budgetary Impact of the General Services Administration's Purchase Contract Program" (LCD-80-7, October 17, 1979).

LONG-RANGE PLANNING IS NECESSARY FOR EFFECTIVE CAPITAL INVESTMENT PLANNING

A successful capital investment program depends heavily on long-range planning.³ Every organization that we identified as successful prepares long-range plans, usually for a five-year period. These organizations understand the many advantages of gauging future trends and developments. They know that long-range planning:

- Encourages early review of priorities and capital investment objectives.
- Serves as a vehicle for coordinating projects and fostering short-term planning.
- Helps determine future funding requirements.
- Informs other agencies and the executive and legislative branches of its capital investment needs in relation to its mission.

U.S. Postal Services

The Postal Service prepares a five-year capital investment plan which, when approved by its Board of Governors, becomes the financial plan for the budget year. The plan is developed "bottom-up" by the field offices and undergoes various reviews by headquarters. Priorities are then set in the plan for the projects to be undertaken.

Each regional office is sent an approved financial plan based on the approved capital investment plan. The regions then implement their plan within the established dollar limits. Before funds are committed, the requesting regional office must prepare a cost analysis for each procurement over \$2,000 and a full economic analysis for each project over \$30,000.

Veterans Administration

The VA prepares a five-year medical facility construction plan, which is also developed from the bottom up. The plan lists all construction projects that exceed \$2 million by year, categories of construction, and location. Public Law 96-22, Section 5007, requires the VA to submit its plan to the congressional authorizing committees for approval.

VA's 1980-84 plan contains 16 different categories of construction such as boiler plants, general projects, medical facility improvements, replacement and modernization, safety and fire. The plan also includes a list of 10 hospitals most in need of construction, replacement, or major modernization.

³Part of OMB Circular A-109, issued in 1976, directs federal agencies that acquire major systems to (1) relate capital investment needs to agency mission and goals, and communicate this relationship to the Congress early in the planning cycle and (2) identify and explore alternative concepts through early contractual competition and competitive proposals as long as economically feasible.

Corps of Engineers

Each year the Corps prepares a five-year investment program that lists the projects available for initiation during that five-year period, given the probable funding constraints. The selection of individual projects is based on national and regional needs within the region's allocated share of the total probable funding level. The five-year investment program does not set individual project priorities but does list, by region, the status of a project's availability for initiation.

Annual recommendations for new starts are made from categories in the five-year plan that have a high priority. Right now, the Corps is emphasizing projects that satisfy the need for hydroelectric power, urban flood control, municipal and industrial water supply, and commercial navigation.

General Services Administration

Right now GSA does not prepare any long-range capital investment plans. Officials said they used to prepare them, but since there have been so few funds for new construction in recent years they feel it is a waste of time to prepare long-range plans for construction projects. However, GSA is currently working on a five-year plan for housing its federal customers. This plan is expected to be ready for use for the 1983 budget cycle.

The lack of capital plans by GSA has recently come to the attention of the Senate Environment and Public Works Committee. Committee members introduced S. 2080, which passed the Senate on June 20, 1980. Among other things, the bill requires GSA to prepare and submit to the Congress each year a program for construction, renovation, and acquisition, along with a five-year plan for accommodating the public building needs of federal agencies.

The Committee has also expressed concern about the piece-meal authorization of individual projects throughout the year. Right now the committee approves or disapproves individual projects without the benefit of knowing the relative priority of projects, or how a particular project fits in the building program. In testimony before the Committee in January 1980, GAO said that S. 2080 is an improvement over the current authorization and planning procedure. We also discussed the need for long-range plans in our report "Foresighted Planning and Budgeting Needed for Public Buildings Program," (PAD-80-95, September 9, 1980). GSA acknowledges that it now has no cohesive, prioritized plan for all construction projects. However, such a plan is in the development stage and would be required by S. 2080.

THE CONGRESSIONAL AUTHORIZATION PROCESS CAN ADVERSELY AFFECT FEDERAL GOVERNMENT PLANNING

Today the Congress must authorize many projects individually before they can be funded. We think that planning and executing capital

TABLE 2 Requirements for Congressional Authorization of Individual Capital Investment Projects

U.S. Postal Service	No approval required
General Services Administration	All projects over \$500,000
Veterans Administration	All projects over \$2 million
Corps of Engineers	All projects over \$2 million*

*Some projects have lower authorization levels.

investment programs can be more effective if the authorization process focused more on an agency's mission and related capital investment needs. Authorizing legislation is the basic substantive legislation that sets up or continues the legal operation of a federal agency or program. Such legislation sanctions a particular type of obligation or expenditure. It is a prerequisite for the subsequent appropriation of funds to carry out a program. The four agencies we studied have diverse requirements for congressional authorization of individual projects, ranging from no control, as in the case of the Postal Service, to almost absolute control, as in the cases of the Corps of Engineers and the General Services Administration.

Each agency has general legislative authority to acquire, operate, and maintain certain types of physical capital. For GSA, VA, and the Corps, the Congress determines (by authorizing individual projects) the location, scope, and timing of capital investments. These requirements are designed to maintain congressional authorization control (in addition to the appropriation control) of individual projects. In practice, however, such requirements, though not necessarily by design or desire, can sometimes lessen congressional control, or at least divert attention from the agency's mission. Without benefit of adequate long-range plans, these requirements force committees and the agencies to make decisions about projects without knowledge of overall needs or priorities in relation to authorized missions.

Only the Postal Service is not required to have individual projects authorized by the Congress. Since it became an independent agency in 1971, the Postal Service prepares five-year capital plans. It has also averaged two to three times more capital investment than it did as a cabinet department under more direct congressional control. In contrast, GSA, which has the strongest congressional authorization requirements, has no long-range capital plans. It has averaged significantly less than USPS in capital investment because of lack of funds in recent years. VA has authorization requirements similar to GSA's, but unlike GSA, its authorizing legislation requires that five-year plans be developed and forwarded to the authorizing committees.

U.S. Postal Service

When the Post Office Department was changed to an independent agency by the Postal Reorganization Act of 1970, it was given general

authority to construct, operate, lease, and maintain buildings, facilities, equipment, and other improvements without further authorization from the Congress. Since it has become an independent agency, investment in capital assets has increased dramatically.

Veterans Administration

Only recently has the Veterans Administration been required to seek authorization of individual medical facilities before requesting appropriations for their acquisition. From 1931 to 1979, the authority to establish VA hospitals and health care facilities rested solely with the president, subject to the appropriation of funds by the Congress. The location and need for facilities was determined by the Administrator of Veterans Affairs, subject to presidential approval. The only restraint put on the VA by the Congress was the funds made available in the annual appropriation acts.

This procedure was changed in 1979 by the Veterans' Health Care Amendments of 1979 (P. L. 96-22, June 13, 1979). Title III of this Act provides that no appropriation to construct, alter, or acquire a medical facility costing over \$2 million can be made unless it is first approved by a resolution of the Committees on Veterans' Affairs of the House and the Senate. These provisions also apply to leased facilities with an annual rental of more than \$500,000. The VA must now submit a prospectus to both committees showing a detailed description of the project, its location, its general costs, and the cost of the equipment to operate it.

The Act also requires that VA submit to the committees a five-year plan for constructing, replacing, or altering facilities; a list of 10 hospitals most in need of construction, replacement, or major modernization; and general plans (costs, location) for each project in the five-year plan.

General Services Administration

Section 7 of the Public Buildings Act of 1959, as amended, says that no appropriation in excess of \$500,000 shall be made to construct, alter, purchase, or acquire any building to be used as a public building until it has been approved by the Committees on Public Works of the Senate and House of Representatives. This section also applies to leases with an average annual rental exceeding \$500,000.

The GSA Administrator submits case-by-case prospectuses to the committees since there is no legal requirement to submit an annual or multiyear plan. The prospectus authorization by each of the committees is a separate action and is not subject to the committee conference process. Thus, GSA's proposed projects are submitted to the Public Works Committees without regard to available appropriations and without explanation of relative priorities. Senator Moynihan, in a statement in the December 5, 1979, Congressional Record on S. 2080, said that:

Other than a pro forma declaration asserting the importance of each to the efficient functioning of the Government, we have no idea of the relative priorities among the proposals, nor do I believe that the GSA itself has any notion of the priorities. We can—and do—authorize projects without knowing whether there will later be an appropriation sufficient to undertake them. Some authorized projects languish unfunded for years, and some are never carried out at all.

Senator Stafford, then ranking minority member of the Environment and Public Works Committee stated that “the prospectus process may no longer be adequate or appropriate.” He added: “the current prospectus process leads to piecemeal approvals without program review or oversight of the policies, and procedures inherent in project proposals.”

GSA officials told us that even though they cannot get funds from the appropriations committees until the authorizing committees approve their prospectuses, 40 or 50 prospectuses are pending approval. We have reported that the authorizing committees may take several months to well over a year to approve some alteration and major repair prospectuses.⁴ For example, GSA asked for \$180 million for FY 1980 alterations and major repairs, but the appropriations committees reduced the request to slightly less than \$146 million because several proposed projects had not yet been authorized. According to GSA officials, delays in prospectus approvals have hampered their plans for funding projects. GSA said it is trying to limit its budget requests to only those projects previously approved, but the agency points out that often it is forced to add projects for which prospectuses have not been approved because of critical repair work and the space needs of other federal agencies.

Corps of Engineers

The Corps of Engineers has the most complex and lengthy authorization process of the four agencies studied. The conception, authorization, and construction of a Corps flood control project travels through several phases of congressional authorization. In 1978, we reported that of 77 flood control projects studied, an average of 26 years had elapsed since initial authorization and start of construction.⁵ Planning and design consumed 12 years of this 26-year period; reviews and the appropriations process took most of the remaining time.

Authorization of Corps projects is at the sole discretion of the Congress. There are three basic phases—study, design, and construction—

⁴U.S. General Accounting Office, “Repairs and Alterations of Public Buildings by General Services Administration—Better Congressional Oversight and Control Is Possible” (LCD-78-335, March 21, 1979).

⁵U.S. General Accounting Office, “Corps of Engineers Flood Control Projects Could Be Completed Faster through Legislative and Managerial Changes” (CED-78-179, September 22, 1978).

and Congress must authorize the study and construction phases. Public Works Committees authorize the conduct of studies, usually after local interests make their desires known through their elected representatives. Congress must then appropriate funds for the study. After the study is completed, the Secretary of the Army (after review by the administration) makes a recommendation to the Public Works Committees. If the project is viable and funds are available for planning, preliminary planning is done. Before detailed plans can be completed and construction permitted, the Congress must pass substantive legislation authorizing the construction. However, some projects under \$2 million can be initiated by the Secretary of the Army without Congress' authorization, if they meet statutory dollar limits.

FUNDING METHODS INFLUENCE CAPITAL INVESTMENT

The source and type of funds, and an agency's ability to control its funds can hinder or facilitate the acquisition of capital assets. Funding methods affect priorities and the extent to which agencies are able to execute a viable capital investment program.

GSA and generally VA construction projects are fully funded. Postal Service projects are funded incrementally from operating receipts and/or borrowing, and Corps projects are incrementally funded by congressional appropriation. Full funding means that all of the estimated costs of a project are appropriated in the first year. Incremental funding is the appropriation of funds yearly for the estimated costs of the project for that year. As a matter of budget policy, we favor the full funding concept. However, not considering lease commitments for all future years clearly understates leasing costs and diverts decisions away from construction and acquisition to constantly escalating leases which are justified on the next year's cost only.

VA and Corps projects are funded from general fund appropriations. Their funds are placed in accounts to be used exclusively for specific capital construction projects and/or acquisition projects. GSA and the Postal Service, on the other hand, are funded through revolving funds set up by the Congress—the Federal Buildings Fund and the Postal Service Fund. These two funds are similar in that receipts from them finance expenditures, which in turn generate receipts. There are, however, important differences in the way the revenues are collected and the funds are controlled.

Activities of the Postal Service are financed by congressional appropriations and by receipts from (1) mail and services revenue, (2) reimbursements from federal and nonfederal sources, (3) interest on investments, and (4) proceeds from borrowing. These receipts are deposited into the Postal Service Fund and are used to pay for operating expenses, retirement of obligations, investments in capital assets, and investment in obligations and securities as determined by USPS. The Postal Service has a distinct advantage over GSA because it does not have to compete with other federal programs for capital investment funds and it can borrow up to \$10 billion. A net increase of up to \$2 billion in any one year can be used for either capital investment (no more

than \$1.5 billion) or operating expenses (no more than \$500 million). The borrowing authority of the Postal Service greatly increases its flexibility to finance operations and capital investment.

The Federal Buildings Fund, authorized in 1972 and begun in 1975, obtains receipts from rates charged to federal agencies occupying GSA-controlled space. According to law these rates are to approximate commercial charges for comparable space and services. Collections are deposited into the Federal Buildings Fund and used, subject to annual appropriation act limitations, to finance GSA's real property operations, which consist of six program categories: (1) new construction, (2) alterations and major repair, (3) purchase contract payments, (4) lease payments, (5) real property operations (utilities, cleaning, etc.), and (6) program direction and centralized services. GSA is also reimbursed from federal agencies for space and improvements that are in excess of those covered by the standard level user charge.

New construction is a low priority in GSA's real property operations. GSA officials told us that new construction gets what funds remain after other program needs are met. Since the Federal Buildings Fund began operating in FY 1975, it has not generated enough money for new construction. Only \$386 million was available in FY 1975 through 1980, an average of \$64 million a year. In addition, because of language in the appropriations acts from 1975 through 1979, about \$2.4 million in excess fund receipts related to the new construction program were deposited in the Treasury as miscellaneous receipts.⁶ Beginning with the 1979 appropriation act, the language was changed to provide that the excess receipts remain in the Fund.

GSA's current annual average of \$64 million for construction projects contrasts sharply with the \$115 million annual average during the years (1959-71) before the Fund was established. Even then, GSA considered the \$115 million inadequate. In 1971 GSA had a backlog of 63 projects, with estimated construction costs of \$750 million, that had been authorized but not funded. GSA pointed out during hearings on the 1972 purchase-contract legislation that with annual appropriations averaging only \$115 million, it would take at least 10 years to eliminate the backlog of construction already approved but unfunded by the Congress.

To reduce that backlog, the Public Buildings Amendments of 1972 (P. L. 92-313) was passed to give GSA a three-year, stop-gap authority to enter into purchase-contract agreements to construct the unfunded projects. Since then, GSA has arranged for the construction and financing of 23 projects for which it makes semiannual payments to contractors for interest, real estate taxes, and amortization of principal. At the end of the contract period, title to the buildings vests with the government.

GSA also used a dual method for constructing and financing 45 building projects. Construction contracting under the dual method

⁶A total of \$13 million for the entire Fund were deposited in the Treasury.

was made the same as under direct federal construction, but the projects were financed by the sale of participation certificates and by borrowing from the Federal Financing Bank.

Today GSA is again faced with a backlog of projects of about \$737 million. The Senate Environment and Public Works Committee recognized that direct construction funds from the Federal Buildings Fund will not put a dent in this backlog over the next several years. The Committee reported out a bill (S. 2080) that passed the Senate on June 20, 1980, authorizing GSA to borrow construction funds from the Treasury and to repay the Treasury from user charges.

In October 1979,⁷ we recommended to the Congress that any new financing authority for GSA be limited to direct loans from the Treasury or the Federal Financing Bank. In January 1980 testimony before the Senate Environment and Public Works Committee, we concluded that federal construction is the best alternative for acquiring space and that borrowing money for direct federal construction is the most practical current alternative due to the limited funds generated from the Federal Buildings Fund.

B Air travel to England through Heathrow or Gatwick, the airports serving London, can be complicated and slow. Projections done in the 1960s indicated that those airports would be unable to handle future traffic loads. A commission was established to recommend sites for a third London airport. (The concern was *where* to locate the airport, not whether the airport was needed. Thus, the effort was a cost-effectiveness analysis, not a benefit-cost analysis.) The case presented here, reproduced from the *The Wall Street Journal*, provides an interesting illustration of the problems created in valuing public losses and gains.

Consider These Questions

1. *What problems do you see with valuation according to fire insurance values?*
2. *What is wrong with the antiquarian's approach?*
3. *Can you propose an alternate approach?*

As a postscript, a third London airport has not been built, and none is currently under serious consideration.

⁷U.S. General Accounting Office, "Cost and Budgetary Impact of the General Services Administration's Purchase Contract Program" (LCD-80-7, October 17, 1979).

Fight Over an Old Church Raises a Tough Question

By a WALL STREET JOURNAL Staff Reporter

What's in a number? It seems inevitable that corporations will try to assign numerical values to elusive social values, but in so doing they may run a risk of absurdity.

Professor C. West Churchman, professor of business administration at the University of California, gives an example from the search for a site to build a third airport to serve London. One spot under serious consideration would have required demolishing the 12th-century Norman church of St. Michael's in the village of Stewkley.

It was disclosed that a cost-benefit analysis had calculated in monetary terms just what would be lost by tearing down St. Michael's. The calculations had used the face value of the fire insurance of the church—the equivalent of a few thousand dollars.

When the calculation was made public, an outraged antiquarian wrote to the *London Times* to urge another, perhaps no less plausible, method of calculation: Take the original cost of St. Michael's (perhaps 100 pounds sterling or about \$240), and assume the property grew in value at a rate of 10 percent a year for 800 years. That would put the value of St. Michael's at roughly one decillion pounds. A decillion is a one followed by 33 zeroes.

St. Michael's was spared after a public outcry arose. But to Professor Churchman it was striking how glibly either side could pin a numerical value on the church. "Only a modicum of plausibility is needed to convince people that the numbers represent reality," he says. "I don't think the need is for more numbers at all. The need is for justifying the numbers"—for some rationale that "tells us what difference the numbers make."

Source: *The Wall Street Journal*, December 9, 1971. Reprinted by permission of *The Wall Street Journal* © Dow Jones & Company, Inc., 1971. All rights reserved.

BEST AVAILABLE COPY

Negotiating Skills for Budget Officers*

Whether presenting before the board of elected officials or one-on-one with a department head, the budget officer needs a tool kit of negotiating tactics for keeping the process moving forward to a favorable conclusion.

By Mike Bestor

A budget is a contract with many parties. A budget is a contract between citizens and their elected officials whereby a specified amount of taxes and fees will be exchanged for services and physical improvements. A budget is a contract between the elected officials and the administration to provide certain resources in exchange for a series of accomplishments. A budget is a contract between the organization and its employees to exchange pay and benefits for work.

In the private sector, good contracts are entered into by both sides with a sense of anticipation as each party agrees to give up some of what is already owned in exchange for something owned by another. All parties involved in buying and selling a new home or starting a new business venture generally feel like winners. In international relations, the entire world can eagerly embrace a contract for peace between warring nations. A good budget in state and local government may not have the drama of an international peace treaty or the tangible feel of a real estate transaction but should generate much of the same positive excitement.

Business contracts, international treaties and governmental budgets that go on to fulfill their promise are not quickly adopted. The process of reaching the agreement is as critical to its complete acceptance as the final terms. The process of negotiating can build trust, understanding of the issues, new solutions and a feeling of accomplishment. The process and the progress are in the hands of the negotiator who may be called the buyer, salesperson, ambassador or budget officer.

Today, the negotiation process, when done properly, involves a mutual search for alternatives that let everyone win and help move the organization toward its

goals. Negotiating a budget is not

- playing ping-pong where the department head asks for a 5 percent increase, the budget officer offers 3 percent, and both finally settle at 4 percent;
- intimidating a department head into submission because the budget person has better access to the top;
- smiling a lot and trying for the budget that angers the fewest people;
- generating reams of spreadsheets, charts and graphs to prove there is only one correct budget; or
- feeding data, ideas, printed reports and maybe gossip to the chief executive officer and letting the CEO, who "is the only one with power," handle the personal confrontations.

Any of these tactics may work in the short run but are destructive to real organizational achievement. The traditional approach to negotiation was often mistaken for confrontation and negotiators were thought of as either strong or weak, aggressive or compliant, winners or losers. Gaining concessions with threats may or may not gain the concessions but will surely damage office relationships: a bad relationship will not be improved by making concessions, and winning at another's expense is not an appropriate goal.

The good news is that negotiating skills can be learned, and adding these skills to the technical ones already possessed will make for a more confident—and consequently, more effective—budget professional. The paradox here is that negotiating is a stressful undertaking, and stress inhibits the creativity needed for a successful outcome. Negotiating a budget in the public sector is stressful because it is complex, conducted with a large audience, and under intense time pressure. The key to handling this stress is preparation, and

negotiating should be approached as any other managerial assignment, one that requires the same five universal tasks of management: planning, organizing, staffing, directing and controlling. The initial four are, ultimately, building blocks to the fifth.

Planning

The planning process itself includes five steps: organizational goals, departmental goals, personal goals and analysis, information gathering and power analysis. The budget negotiation worksheet shown in Exhibit 1 will help the budget officer plan and prepare for the negotiation. The mission statements of the organization, the budget office and the department in question are combined with the specific directives from the CEO that apply to the current budget process as a constant reminder of the purpose behind the budget process. The budget officer then looks for the quantitative and the often-overlooked qualitative pressures that face the department to better understand the other side. If additional research must be done, the budget officer should identify it now and set specific deadlines for completion.

Organizational Goals. The budget officer must first step back and review the organization's mission statement, goals and strategic plan. Budgets, after all, are not a goal but a tool the organization uses to achieve its own reason for being. If the organizational goals and plans have not been formally written and adopted, then interviews with the elected and executive officials may be required to focus the budget process.

Departmental Goals. The budget department should have a clear definition of what makes a great budget. As GFOA's

**Exhibit 1
BUDGET NEGOTIATION WORKSHEET**

Organization: _____ Budget Year: _____ Date: _____
 Department: _____ Budget Officer: _____

Mission Statements:

The Organization

The Budget Office

The _____ Dept.

Specific policies and directives for this budget:

Research:	19__	%	19__	%	Current	%	Target
Total Budget							
This Department							
Quantitative measures of demand on this department:							
1							
2							
3							
Qualitative measures of demand on this department:							
1							
2							
3							

How would this department describe the outcome of the last budget negotiation?

What research must be done to fully understand their positions and problems?

forecasting, cost analysis and inflation estimates. It is crucial to understand what the department heads want and not to assume that they only want more money for their department. A budget officer can offer security, praise, flexibility and a quick decision that lets them "get back to the job," which might be more important than money. What are the quantitative and qualitative measures of demand on the other department? What changes in pressure do those measures reveal? How would this department describe the outcome of the previous budget cycle? What other research must be done to fully understand their perspective?

Power Analysis. This is the final step in the planning process. Position within the organization is only one source of power, and any budget officer intimidated when outranked should inventory other power sources available:

- hard work,
- specialized knowledge,
- focused job responsibilities,
- high ethical standards,
- being useful,
- dispensing praise,
- sharing or withholding information, and
- quiet self-control.

Power is very personal and very situational. If an employee is truly committed to the mission of the organization, the integrity of that commitment carries exceptional power into every encounter. Only the lion can make the rational decision to lie down with the lamb, not the other way around, and the determination of who is a lion and who is a lamb within an organization depends on more than position. Much of it depends on each individual's own perception and analysis. The lion has more choices and therefore can accomplish more.

Distinguished Budget Presentation Awards Program recognizes, a great budget is a policy document, a financial plan, an operations guide and a communications device. A budget department may add other criteria, like empowering staff and encouraging an energetic debate, but should know in advance what a successful process will look like.

Personal Goals and Analysis. Budget officers also must consider their own personal plans and goals, reviewing them and committing them to writing. Will the same process be undertaken with the same players next year? What about the year after that? A sobering thought and one that can prevent many stupid mistakes.

Failure to recognize and understand what is really desired leads to stress and burn-out. If getting home to one's family by 5:30 every night is important, for example, then the budget officer should develop a budget schedule that allows it. Personal traits also should be analyzed. Are minute details all-consuming? Are decisions made quickly or deliberately? Are notes important? Not examining oneself objectively and thoroughly can make for a budget officer who misses a chance to control some natural tendencies, exploit useful ones and compensate for weaker ones.

Information Gathering. Information gathering must not be limited to revenue

Organizing

There are several organizational factors that the budget officer can control or influence to improve the prospects for a positive negotiating experience. Sound strategy requires preparation of at least five: controlling the timing, using the written word, anticipating issues, creating limited apparent authority and arranging the setting.

Controlling the Timing. Time pressure is one of the most critical factors in any negotiation. It is also the one area where the budget department has almost unlimited power, within statutory limits,

134

to exercise control. The budget officer can set the calendar advantageously, putting the bulk of the pressure of deadline onto others. The Pareto rule, as it applies to negotiations, should be remembered.

"Eighty percent of the concessions are made in the last 20 percent of the time." A series of deadlines should be built into the schedule so that several small concessions can be encouraged instead of one big one encompassing every single issue at the end.

Using the Written Word. The power of the written word cannot be underestimated. Prices posted are rarely questioned, while prices quoted often are open to bargaining. The budget officer should write an instructional memorandum for everyone involved in the process, including the decision makers. If possible, the memo should be signed by the CEO. Anything written conveys the message that everyone is being treated the same and that the process is open and aboveboard. Furthermore, writing down hoped-for outcomes gives them a legitimacy that many will not question.

Anticipating Issues. A list of issues attempts to anticipate everything that may come up in the negotiations. A key strategy is never to narrow things down to just one issue—if that happens, someone will win and someone will lose. With several items on the table, tradeoffs can be made more evenly. It may be necessary to add issues, particularly ones that later can be given away so that everyone will win something.

Creating Limited Apparent Authority. Even if the budget officer has absolute authority, a role should be designed that makes it look like this is not the case. One idea is to build in a review step. A budget committee can function like the often mythical loan committee in a bank, keeping the pressure off the officer to make a decision on the spot. The committee also can function as the "bad guy," leaving the officer free to be the "good guy."

Arranging the Setting. Finally, the budget officer should consider how the setting itself will influence the outcome. One party may well be intimidated by the other's office, so the best setting for a mutual win is a neutral place where the officer and the department head can sit side by side and work through the problems together. Facing off, even across a neutral table, will feel like a contest no matter what is said. Sitting together, side by side with the problem in front, helps create a subtle bond of teamwork.

Staffing

A good negotiator has patience and an ability to plan, is goal directed, understands the organization, is innovative and has a fair amount of stamina—all qualities that can be developed and improved.

Good negotiators are made, but it takes a year-round commitment. Part of the departmental training budget should be invested in some of the seminars, books and cassette tapes on the subject. The budget officer should develop supporting skills in listening and staying focused.

The performance appraisal criteria used for budget negotiators are extremely important in determining the success of the win-win strategy. Short-term measures, such as percentage cuts in departmental budgets and failure to deadlock, do not define performance; the real measures come over time as the organization moves toward its goals. While the budget officer should work efficiently and quietly, the organization's needs may require that some people feel pain. That possibility should be discussed and prepared for early in the process.

Directing

Directing means staying focused on the goal. The budget process is undertaken to improve the organization while improving individual relationships. A favorable agreement must be reached in a reasonable amount of time while analyzing options. Public input is sought even though the very presence of an audience can inhibit the creative process and make everyone adhere more strongly to stated positions. The director's job is to search behind those stated positions for the underlying interests of all parties and emphasize the areas where true interests overlap.

If the budget department is large enough, role playing and other rehearsals will prepare every member for more confident performances in live encounters. The small or one-person departments should seek the same rehearsal and coaching from peer groups.

Controlling

All of the groundwork the budget officer lays over the first four steps to the negotiating process will reap rewards during the final test: in the trenches. Whether presenting before the board of elected officials or one-on-one with a

FOR FURTHER READING

Dawson, Roger, *The Secrets of Power Persuasion*, Englewood Cliffs, NJ: Prentice Hall, 1992.

Karrass, Chester L., *Give and Take*, New York, NY: Thomas Y. Crowell, Publishers, 1974.

Karrass, Chester L., *The Negotiating Game*, New York, NY: Thomas Y. Crowell, Publishers, 1970.

AUDIO CASSETTE PROGRAMS

Dawson, Roger, *The Secrets of Power Negotiating*, Chicago, IL: Nightingale-Conant, 1992.

Fisher, Roger and Ury, William, *Getting to Yes*, Chicago, IL: Nightingale-Conant, 1986.

department head, the budget officer should know several tactics for keeping the process moving forward to a favorable conclusion. An effective budget officer must know how to deflect progress-stopping moves. The following tactics can be practiced in day-to-day commerce away from work until they become familiar. Each is a legitimate tactic to maintain productive communications in stressful situations. They should not be used, however, by someone who is uncomfortable with them or by one who sees them as a tricky way to win an argument. Since each also may be used by the other party, the professional budget negotiator should be familiar with them all.

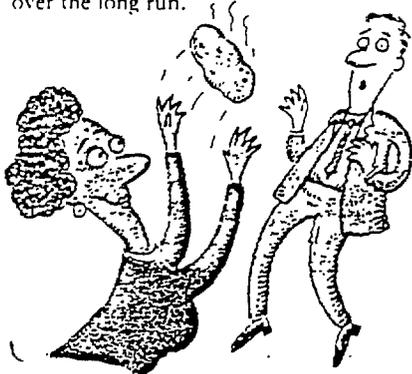
Asking for More than Is Expected. This tactic may seem obvious, but it is the most ignored and yet most productive tactic in any negotiation. Asking for more than is needed often will result in getting more and can always be used to allow the other person to win something. In negotiating a budget, as in developing a career, those who aim higher get more.

There are ethical and strategic considerations, however, that must not be crossed. The negotiator must be able to justify each request with a clear and precise statement of the benefits it will give to the organization and why the cost to the other party is reasonable. The idea is not to put forward a list of outrageous proposals but rather to have an array of issues that the negotiator confidentially ranks from "must have" to "want it" to "don't really care."

The counter tactic for the budget officer who feels the other party is asking for too

much, is calmly asking the simple question, "Why do you want this?" after each item. The key here is *why*, not the word but the thought. As the list develops, the question can be restated for variety, "How would we justify that request to the committee?" or "What are your reasons for this request?" The tone and the words should indicate that the questioner is seeking information for a problem-solving exercise and not engaged in a contest of wills.

In any bargaining situation, if one's first offer is accepted quickly, the natural reaction is to wonder if too much (too little) was offered or if the merchandise or the agreement is inherently flawed. After winning what was sought, one still feels cheated. This is referred to as "the winner's curse" and it can destroy working relationships. A hard-won agreement where everyone gives up something is ultimately more satisfying and productive over the long run.



The Hot Potato. Just like in the child's game, when someone tosses out a hot question or dilemma, the budget officer can quickly turn it around and gently toss it back in the form of a question. For example, if asked, "How can I possibly deliver quality services with 10 less people?" the budget officer can respond, "Help me understand this. When you talk about quality services, exactly how do you measure that?" If the hot potato is, "You're asking too much!" the gentle return toss could be a simple and quiet, "Too much?" or "Now when you say 'too much' you mean too much relative to what?"

By taking the key word or phrase and gently tossing it back to them in the form of a question, the budget officer can deflect the hostility. Questions are an important tool for every negotiator and the best questions come early, as part of a genuine fact-finding effort. If that pattern is established by the budget officer and it

that pattern communicates a sincere desire to understand, the gentle question becomes an extremely effective shield.

The Freedom of Information Gambit. The public nature of governmental budgets is an asset that can be used advantageously. In many other sectors the only information available is what the negotiators reveal, but in government stated problems and claims can be inspected in person. The budget officer and elected official can ride in that "unreliable" truck, search through files that must be microfilmed and, in most cases, talk to participants in every program.

Each negotiator is trying to change the beliefs of the other, and the process of changing someone's beliefs, in civilized society, is a process of education. The public nature of their work gives state and local government officials an advantage: there are no proprietary or trade secrets to protect, although there are some functions that do require confidentiality. Budgeting should not be a spectator sport; show-and-tell is still one of the best ways to generate creative solutions.

Set It Aside for Now. When an uncomfortable impasse arises, the budget officer can move past it, and then bring it back while there are still other issues on the table. It must be remembered that narrowing negotiations down to just one issue creates the undesirable win-lose game again. Temporary adjournments are sometimes the best and sometimes the only way to maintain progress. Every budget calendar should allow for cooling off periods.

"We'll Have to Do Better." Using the previously created higher authority is a way for the budget officer to halt a seemingly unstoppable drift in negotiations towards an unsatisfactory agreement. If the higher authority's response to the last proposal was, "You will have to do better," a cooling off period occurs and the excitement of a new, mutual challenge is introduced. It may be just what is needed to get the officer and other parties creative and productive again.

Concessions Matter. A good negotiator considers every concession significant and strives for a counter-concession. The budget officer can always say, or imply, "If I do this for you, what will you do for me?" The truly professional negotiator always lets the other party make an even bigger deal, to their constituents, of concessions won. The public-sector professional does not react personally

when the elected officials claim great credit for keeping the bureaucrats in check or when the department head tells employees of budget victories.

Concessions Must Send the Right Message. The only pattern to concessions that should be established is one of diminishing returns. Five concessions of \$100,000 each are a mistake; it is better to give \$300,000, \$100,000, \$50,000, \$20,000 and \$5,000. The big early concession shows a commitment to reach an agreement, while the smaller and smaller pattern shows that a limit is being approached. If every concession given has been for \$100,000, there is no reason to believe that further effort will not yield another \$100,000. In the second example, one might expect to earn one more concession of \$1,000—hardly worth the time.

Splitting the Difference Is Unwise. The budget officer should never offer to split the difference but should encourage the other party to do so. If the officer proposes \$700,000, and the other person asks for \$800,000, there is obviously a \$100,000 gap. The other party may well offer to split the difference, at which point the officer can take it back to the committee higher authority. Then, the negotiator can return and say efforts to sell that amount to the committee (the bad guy) failed. The officer is still at \$700,000, but the other party has already come down to \$750,000 and, in time, may well offer to split the difference again. In short, patience and stamina in negotiations pay off.

Playing Dumb. Some questions simply do not deserve an answer. For those that do, budget officers are not required to know all the answers. The more the other party must explain, the more time there is available to think through the problem and search for solutions. Playing dumb encourages the other party to talk and ultimately get to the vital, underlying reasons behind the stated positions.

Playing dumb is not the same as being dumb. While the other person is talking, the skilled negotiator pays very close attention to all the verbal and nonverbal signals that are being sent. Libraries are full of helpful manuals to improve one's ability to listen with all the senses, but those who have achieved any level of success instinctively are prepared to understand, if they will just pay attention.

Using and Watching for Words that Help. The smart department head will seek a bigger capital or training budget by talking in terms of the "investment" to be made, not the "cost." The savvy data

processing chief talks about the organization "owning" the best technology, not "buying" it. The career-oriented budget officer tells the mayor that the assignment to cut the budget by 10 percent is "challenging," not "overwhelming."

President Clinton used this tactic very effectively in his campaign when he talked about "public investment" not "government spending." The media attention and criticism of this tactic may lessen these particular words' effectiveness in the short run, but the concept is still sound. Overly ambitious attempts to put a favorable spin on every proposal, however, will generally backfire even on the most skilled practitioner. Honesty is still the best policy.

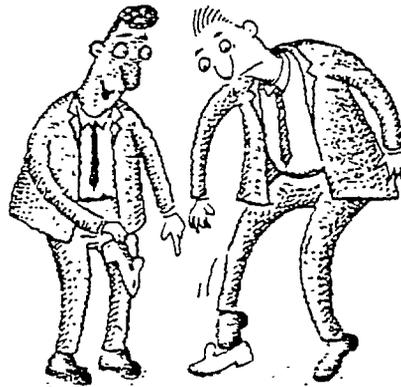
The negotiator who is trying to build a relationship of trust and mutual support also should use powerful words to communicate when personal commitments are made during the process. One should never promise to "try" to meet a deadline but should set a deadline that can be met and say, "I will have it ready by..." Firmly stating the commitment to perform, when that performance is totally within one's power, lends credence to those appeals to higher authority when, in fact, the budget officer can only try to sell the idea to someone else. Wimpy speech patterns, such as "I'll see if I can get this done by sometime next week," have become a bad habit for too many people and do not build respect.

"Ouch." A physical response to a request for a concession can be very effective in demonstrating that the request is an unpleasant surprise. Responding physically, for example by flinching at a request, immediately lowers the other person's expectations of having it granted. This is one controlling tactic that must not be overdone but can be used effectively once or twice.

The Joke. There is no better tool for relieving a tense moment than a sense of humor. The budget professional should not try to memorize jokes but rather analyze the good ones for the cleverness inside. Keeping and periodically reviewing a log of witty phrases and clever metaphors will help the memory recall the right witticism at that crucial time. During a particularly difficult session, one budget officer was asked by a councilman, "What would happen if we cut every travel budget by 50 percent?" "Well sir," the officer replied, "I guess we would still be able to send as many people to training and professional meetings but we couldn't bring anyone back." The surprise and

silliness of that response took the tension out of the room in an instant, clearing the way for a more meaningful conversation.

Silence and Listening. Asking a question creates tension, but talking relieves that tension. Once the budget officer asks a question, silence should be kept until the other person answers. In an adversarial situation, the first person to talk loses. In a cooperative, problem-solving session, talking first after asking a question relieves the other party of the need to think. In every situation, sincerely and actively listening to another person is one concession that is easily given and warmly received. Listening is a concession just like any other and it is not unfair to expect a counter-concession from the other party.



"Put Yourself in My Shoes." Asked to sympathize, the budget officer responds, "Yes, I know you have a serious problem, but how else would you suggest we meet the mayor's directive to cut the budget by 10 percent?" This is the same tactic the budget officer spent time with in the planning phase, only reversed. The budget officer who has spent time looking at the problem from the other's perspective has a legitimate right to request reciprocity.

Changing the Other Party's Focus. If the department head is hung up on the big picture (e.g., a 15 percent personnel cut), the budget officer can change the focus to an item-by-item review of the department's responsibilities. If stuck on a particular function or role to be cut, the budget officer can talk in terms of the total departmental work force or the historical pattern of the amount of space the department takes—anything that might be a new angle on the problem that is causing so much difficulty. Just like a high-quality camera lens, changing the focus will help both parties see and understand the total picture.

Grade the Impasse. A powerful tactic for breaking an impasse uses two very direct questions: "Help me out on this so I can better understand our difficulty. On a scale from one to 10, with 10 being that you agree with everything I've said, where are you now?" The other party almost always will give a number in response to this question. The next question is: "What will it take to get you to a 10?" This tactic works so well that it should be used only when the questioner really wants to know the answer.

Change the Negotiator. Sometimes the only way to break an impasse is to introduce a different player. Large budget departments can prepare for and use this tactic with little difficulty. Smaller departments may need more skill to avoid ever needing this one. A new face is sometimes all that is needed but a new negotiator also can ask the other party to review the progress made so far. By focusing on the progress made, the new negotiator can regain lost momentum.

And Then Some. The effective budget officer always remembers the long-term relationship and

- keeps every promise made and then some,
- helps the other person win and then some, and
- helps the organization achieve and then some.

Achieving the Mission

Budget officers have a contract with their organization to help that organization achieve its mission. The contract and the mission might not be in writing, but the professional understands and strives to fulfill both of them. The professional accepts personal responsibility to gain new skills that will turn the audit process itself into an effective tool of accomplishment for the organization. Skilled negotiators challenge themselves and others to reach the attainable limits in a manner that increases productivity and morale and makes everyone a winner. □

MIKE BENTON is city manager of Golden, Colorado, and a seminar instructor for GFOA's shared training program in effective budget presentation. He also served in state and county government in Missouri as an adjunct instructor for two colleges. He holds M.S. and B.S. degrees in management and is a certified financial planner.

DESCRIPTION OF THE FINANCIAL PLANNING MODEL

Methodology

The model was developed on an Excel for Windows spreadsheet, version 4.0. It is broken down into four main areas: Input tables, a capital budget, an operating budget and rate calculations.

The model was built to be as flexible as possible to adjust to new and changing information. Each of the various sections are located diagonally down and to the right of each other to allow for added columns and rows without adjusting the other spreadsheets. Various line items in the input tables, and capital and operating budgets are left blank to allow for entry of additional data which we do not currently have.

Input Tables

Each of the input tables allows the user to change information as needed and run various financing and construction scenarios. This information then "feeds into" the capital and operation/maintenance calculations and ultimately, into the rate calculations. There are 4 input tables:

- A) Input Table 1: Funding Sources and Characteristics
- B) Input Table 2: Project Start and End Dates
- C) Input Table 3: Assumptions for Capital and Operating Budgets and Rate Calculations
- D) Input Table 4: Individual Construction Schedules per Project

A) Input Table 1: Funding Sources and Characteristics

The right side of this input table lists each of the funding sources participating and the corresponding percentage contribution to each project. The potential sources include the City of Szeged, Central Government grants, World Bank loans, European Bank for Reconstruction and Development loans, commercial bank loans, vendor equity, local assessment districts and a Pay-as-you-go fund (discussed in more detail in the Capital Budget section).

The left side of the table describes the characteristics of each funding source by type, total amount, and interest rate, term, and grace period for loan sources.

B) Input Table 2 Project Start and End Dates

This input table lists the start and end dates for initiation and completion of each project. The corresponding construction schedules in the capital budget will shift based upon the start dates entered.

C) Input Table 3 Assumptions for Capital and Operating Budgets and Rate Calculations

This table shows our assumptions with respect to the following: inflation, devaluation, sewage flow and water demand, exchange rates, household statistics, water and sewer hookup information, operation & maintenance, depreciation, abstraction, fines, value added tax, necessary debt service coverage and equity return.

D) Input Table 4 Individual Construction Schedules per Project

This input table shows the individual cost schedules for each of the different projects. The data is entered as a "block" of yearly costs. The construction start year input (as discussed in B) then instructs the model to take these blocks of costs and move them to the appropriate time period in the capital budget.

Capital Budget

The capital budget is organized into uses (yearly project costs) and sources (of funding). The yearly project cost information is derived from the data fed into Input Table 4. The data from the latter is processed through two intermediate tables before reaching the final capital budget. First, the base construction costs are fed into a "Detailed Uninflated Capital Cost" table which reflects the appropriate project start and end dates as determined by the timing inputs entered into the "Project Start and End Dates" input table. Then, the information from this table is fed into a "Detailed Inflated Capital Cost" table which inflates the costs to the appropriate year using a projected inflation rate for that year (The inflation rates we used are discussed in more detail in the Assumptions section). Finally, the detailed inflated costs are fed into the final capital budget in summary form and are shown with corresponding funding sources.

There are 8 possible funding sources that we show in the model (of course, these sources can be modified as more specific financing information becomes available)

- (1) City of Szeged Grants
- (2) Central Government Grants
- (3) World Bank Loans
- (4) EBRD Loans
- (5) Commercial Bank Loans
- (6) Vendor Equity
- (7) Local Assessment Districts
- (8) Pay-as-you-go fund derived from service charges

The sources of funding figures are derived from the data entered in the "Funding Sources and Characteristics" input table. The yearly capital cost for each project is multiplied by the corresponding funding source percentage entered in the aforementioned table to determine each funding source's contribution to each year of capital costs.

At the bottom of this spreadsheet is a Capital Works Fund subsection. This fund is used to pay for all capital costs not covered by the other funding sources. Capital Works Fund money is derived from two sources: (1) a pay-as-you-go transfer and (2) a depreciation transfer from the operating budget. Both sources originate as line item expenses in the operating budget. The sum of these two transfers covers the shortfall from the seven other funding sources. The ending balance of the fund after withdrawal must be at least zero. Accumulating a positive balance may be desirable if the city wants to fund future projects without raising future rates.

Operating Budget

The Operating Budget is organized into operating revenues, operating and non-operating expenditures, debt service coverage calculations and determination of vendor equity return. The following sections describe these items in more detail.

Operating Revenues

Operating Revenues consist of service charges and fines (charged to non-users of the sewer network who discharge sewage into the network or river). The service charges are separated into 3 categories: sewage treatment, sewage collection and water service. The annual charge per category is based upon the total annual costs attributable to that category. These costs are described in more detail in the "Rate Calculations" section.

Operating Expenditures

These consist of operation and maintenance costs and transfers to the central government. Operation and maintenance is made up of energy, labor and direct costs (for repair and replacement of pipes, etc.). Value added tax (VAT), river discharge fines and abstraction fees are transferred back to the Central Government.

Non-Operating Expenditures

Non-Operating Expenditures include total interest payments, planning costs for the wastewater treatment plant and Sewer Group A, funded depreciation, and the pay-as-you-go transfers. Funded depreciation and the pay-as-you-go transfers are transferred to the Capital Works Fund to cover the shortfalls in capital funding.

Debt Service Coverage

Debt Service Coverage is calculated by dividing net operating revenues by debt service, i.e., the sum of interest and principal. Note that net operating revenues does not include non-operating expenditures.

Return on Vendor Equity

The model calculates a pre-tax equity return on total vendor equity investment. We provided for a sufficient cash flow to target an approximate 30% return in each of the scenarios. This was accomplished by adjusting the debt service coverage ratio, which is included as part of the rate structure. For example, by increasing debt service coverage, rates increase, which in turn increases revenues, annual cash flows and ultimately, equity return. Therefore, since the cash flows are different in each scenario, debt service coverage ratios are also slightly different so that each scenario has an approximate 30% equity return.

Rate Calculations

The rate calculation section is located above the operating budget in conjunction with a cost summary. The cost summary lists all the costs associated with the three projects, which consists of planning, capital funding (includes depreciation), operation and maintenance, debt service (includes appropriate coverage and forint devaluation against the dollar), abstraction fees (for water service only) and value added tax.

The rate calculation section first shows the expected sewage discharge and water consumption volumes over the 1994-2013 period. Below this, rates for sewer treatment, sewer collection and water service are calculated by taking the annual cost summary figure per project and dividing by either the sewage or water volume figures to obtain a cost per cubic meter fee. This method of calculation assumes that the rates charged are **only enough to cover costs**. However, if the City decides that it wants to accumulate money to fund any future projects, then rates can be increased appropriately to meet this goal.

Given these rates, a comparison of monthly bills to monthly household income is then determined. This is done in two steps. First, projected monthly household income is calculated by taking historical monthly income data per employee, multiplying it by our assumed 1.8 people/household and inflating the result to the proper year. Then, the total monthly household bill is calculated by multiplying the 9.0 cubic meters of water usage and sewer discharge/household/month figure (5.0 cubic meters/person/month times 1.8 people/household) by the corresponding rates. The sum of the monthly fees for sewer treatment, sewer collection and water service gives a total monthly bill for all services. This total is then divided by the monthly household income to obtain the percentage of monthly income, which should not exceed 30% for any scenario in any year. If it does, then construction for particular projects must be delayed until the percentage decreases.

Server project budget handouts dec06.ritu Method-e.doc

**A COST/BENEFIT ANALYSIS OF
SAMPLE CITY'S INVESTMENTS
BY USING THE "AMOEBEA" INDUSTRIAL PARK PROGRAM
AS AN EXAMPLE**

*by Mihály Lados
(MTA RKK Scientific Institution in Western-Hungary)*

Background

Sample City is located in Dream Valley and its population is 50,000. At the turn of the 80s and 90s, Sample City's economy was struggling with crisis. A number of companies had to lay off people, *unemployment* grew rapidly. The number of unemployed reached 3,000 soon, which meant a 12% unemployment rate (higher than the national average.) The problem was further increased by the fact that due to a large proportion of young people in the population, 1,000 new jobs would be necessary in the next 5 years. (The difference between the number of those who will have their first job and the number of those who will retire.) In order to manage that problem, the City started to prepare a *city development strategy*. During the development of the concept, a number of city development problems were revealed in addition to problems of the local economy. In addition to unemployment, the following factors were considered as severe problems that needed immediate action:

- improvement of the *environmental condition* of the city (air pollution and soil contamination was higher in Sample City than the national average);
- improvement of *water management* (the pipeline system had a lot of wear, water and sewage fees were higher than average due to expensive operations, drainage level was low, the water pipeline system was 60% larger than the drainage system);
- having a new *landfill* (the existing landfill was outmoded and its capacity would only be sufficient for the next two years at current disposal rate);
- modernisation of the *roads network* (30% of the roads were not surfaced in the city, and only 10% of the surfaced ones were of good quality).

The above listed problems themselves would need an annual Ft 1 - 1.5 billion from the city's budget in the next 5 years. Sample City had a budget of roughly Ft 5 billion at the beginning of the decade. This means that at least one fifth of the city's funds should continuously be spent on the capital budget. At the same time 85% of the budget had to be used to cover the operating budget during this period. The city managers therefore had to prioritise the problems listed.

According to their strategy, reduction in unemployment was the *first priority*. They set an objective that *about 2,000 jobs would be created in Sample City within 5 years*. The city managers defined the programs that can lead to the implementation of the objective. These were the following:

1. Create an organisation that helps small- and medium-sized companies to develop;
2. Develop and apply a city marketing policy and a policy to encourage businesses;
3. Environmental rehabilitation of unused industrial sites;
4. Create and industrial park.

There were energetic debates about the planned industrial park program among the municipal board. One standpoint said that this program was an opportunity that is worth investing in, because it can lay the groundwork for the development of Sample City. According to the other group of representatives it was unnecessary to invest in an undertaking like that in a period when many companies are wound up, therefore there is an abundance of supply in sites. Experiences showed that some of the investors were interested in "*green-field*" projects only, which supported the position of the first group. The board of representative set up an advisory team with the municipal employees and external experts on it to prepare the "Amoeba" Industrial Park Program (January 30, 1991).

The team had two main responsibilities. First, they had to determine the magnitude of the project and the *minimum risk to assume* by the local government in it. Secondly, they had to develop an *action plan* to help create the industrial park. The municipal board were aware that the local government did not have funds enough to cover the project. The vice mayor, who strongly supported the undertaking, started finding *external funds* (possible state grants) and *investors*.

As a result of the *preliminary studies* by the team, it was determined that Sample City should service a 100-hectare site, that can later be used by small- and medium-sized companies, the majority of whom will apply environment-friendly technologies. The site was selected, the first plans and the *feasibility study* were prepared. The pay-back period was estimated to be 15 years. It was also estimated that, provided the entire site is developed, about 40 companies can be expected to use the site, creating 3,500 new jobs. In the first phase they wanted to use 40 hectares of the total land. According to calculations, this phase of the program would cost Ft 1 billion. Therefore external funds had to be used inevitably.

The situation was further complicated by the fact that the site that was considered suitable for the purposes of the project was in the ownership of 50 owners as a result of the compensation scheme. Therefore *purchasing the land* at an appropriate price, as well as making options contracts in order to avoid speculative transfers of ownership became key issues. The other important task was to *establish a company* to manage the industrial park, since external investors were also needed to create the infrastructure.

The city managed to obtain the support of the *utility companies* in the city, who expected that, as a result of the project, there would be an increase in the consumption that was reduced by the crises and therefore they can more efficiently utilise their capacities. The local governments of the communities nearby, whose residents had had jobs with companies in Sample City before as well, created a *regional development company* as a forum to give support to the project. As investors showed interest towards the region, a *bank* also thought the project worthy to invest in. Sample City, together with the said groups, formed the industrial Park Ltd. (IP - October 1, 1991).

The city's contributions to Phase I of the project were the land (Ft 40 million) and cash (Ft 60 million). During the next two years, Sample City transferred additional funds (Ft 300 million) to the company in interest free loans to make its contribution to purchasing the land necessary for the implementation of further phases and to create the main utility networks. Part of this sum (Ft 50 million) was repaid by the company, the other part (Ft 250 million) was transformed into capital contribution. Thus Sample

City's stake in the company was close to 40%. In order to cover the funds transferred, the City took out a four-year term loan of Ft 100 million (September 30, 1992).

The commissioning of Phase I of the "Amoeba" Industrial Park was on April 15, 1993. In parallel to land servicing, the first companies started construction. A textile factory in Austrian ownership had its opening ceremony as early as July 1, 1993, while a car parts factory in German ownership started production on March 1, 1994. No-one followed the first swallows for a long period.

In spring 1995, events accelerated a bit. First a forwarding company from Austria indicated their intention to invest, then an electronics parts factory from the Netherlands bought land, the Holland firm belonging to the group of the multinational company that had settled in Sample City earlier. Both companies bought lands larger than average. In early 1996, a British trading house started to build a regional distribution warehouse. By the end of 1996, all the three companies started their operations.

Some local companies started to show interest as well. Two of them will certainly be dwellers in the "Amoeba" Industrial Park. Both companies started their operations in the late 80s and gradually grew out their sites or were forced to operate at more than one sites. The city gave support to both companies by assuming 25% of the land purchase price, which was very high for local enterprises: 4,000 Ft/m².

In order to foster its further development and in the hope that external funds (central and international aid programs) would be available to them, the IP Park decided to set up an innovation centre (incubator house). They managed to involve the local university and the local government of Sample City as partners. That meant a commitment of Ft 20 million and Ft 30 million for the city for the next two years.

Evaluation of the program by cost/benefit analysis

The "Amoeba" Industrial Park Program is closing its 5th year now. A kind of review became necessary. The city managers focused on two areas. First, they wanted to see to what degree the program objectives were realised (reduction in unemployment). Secondly, whether the investments in the program will return during the planned period (15 years) based on costs and benefits so far, and future commitments and benefits expected.

The "Amoeba" Industrial Park Program created 335 new jobs so far, which is only 17% of what was planned for five years. We should remember, however, that the program is just over its introduction to the market. According to companies' plans settled in the Park so far, the number of their employees will be over 1,100 in year 2007, which is almost one third of what was expected from the Park.

The companies that have settled and made contracts bought 14 hectares of land so far, and made options contracts for an additional 10 hectares. Thus more than two thirds of the useful land¹ for Phase I, or one fourth of the total useful land has been sold.

Investment return calculations for the project were made at 1992 price levels, because Phase I of the "Amoeba" Industrial Park was completed in that year. Data items were calculated up until the year 2007, since prior expectations included a 10-15-year period for businesses to settle and gradually occupy the park. The official CSO consumer price index was used to create the common price level from 1991 through 1995. For forecasts beginning with 1996, the GDP deflators of the two scenarios used by the World Bank in its 1995 Country Report on Hungary were used.

The analysis was made under the assumption that the companies that settled or made contracts so far as well as the incubator house to be created will attain their objectives in the next 10 years (Table 1), and no new company will settle in the Park. Thus *the model is very sensitive to changes in number of jobs*. This means that the benefits calculated will further increase with each new settlers. It is true the other way round as well, however, i.e. if one of the companies that have settled in the park by now go bankrupt or cannot "make" the target job number, the benefits calculated will decrease.

The calculations of the model are also *very sensitive to any discrepancies of inflation from the expected band*. If inflation in the Hungarian economy fails to decrease below 20%, the calculated benefits will decrease. If a more favourable inflation trend occurs, the calculated benefits will increase.

Almost all the *expenditure elements* could be determined from the annual reports of Sample City's local government (Table 2): design costs borne by the city, advisory fees in the initial phase of the project, land acquisition, land servicing, share capital in cash for the company established, cash transfers and subsidies given to the IP and other companies, as well as the loan and its interests.

Taking into consideration all the above, the city established that they had invested about Ft 560 million, at 1992 prices, in the 'Amoeba' Industrial Park project.

The city tried to analyse all the benefits as well. They took into consideration the following factors:

- the loan taken out
- dividends from the IP Ltd.
- interest payments made by IP Ltd. for the city
- receiving back funds transferred
- increase of the city's stake in the share capital of IP Ltd.
- estimated shared PIT
- estimated normative subsidies
- estimated income supplement benefits saved
- estimated business tax incomes
- estimated building tax incomes

¹ The total are of the Industrial Park is 105 hectares 15 ha s of which cannot be sold, because they are occupied by infrastructure (road network, pipelines, power distribution units) Out of the 40 ha s of Phase I land, 5 ha s are used by necessary "external" infrastructure.

With negative signs were recorded in the analyses each unrealised income item, such as the city's dividends from IP Ltd.², though the IP Ltd closed each year so far with losses, except for 1995. Additionally, unrealised income will be caused by the two-year tax exemption from building and business taxes granted to those who settle in the industrial park.

For funds coming through the central government, the sharing proportions to be determined upto 1998 were taken into consideration at the end of the previous year, and it was assumed that they would not change in the next decade. The PIT sharing factors have no substantial importance, in fact, as long as the direct PIT supplement system and the county governments' proportion is low, since 80% of the normative subsidies is covered from the part of PIT that stays in the central budget. This means that except for the direct PIT supplement and county subsidies, the full amount of PIT paid by communities are returned to them.

Since estimations can be made about the number of temporary jobs (on the project implementation) and permanent jobs³ in the industrial park as well as the per capita PIT payments in the community, therefore both the direct PIT refunds, and the PIT refunds in proportion to population, as well as the normative subsidies can be calculated.

The previous years' monthly average income supplement benefit costs are known, therefore, using the estimated of number of jobs, it can be calculated how much money the city can save on that. For calculation purposes each employee was treated as if they were unemployed if they did not have the job created in the industrial park for them.

For calculations on the business tax, the two-year exemption granted for businesses in the park was taken into account; and, based on implementation costs, the design companies' and contractors' (with registered headquarters in Sample City) net sales incomes from the industrial park as well as the tax income on them were calculated. Attempts were made to make estimations on utility companies' net sales incomes from the industrial park and resulting taxes. Since utility companies in Sample City are exempt from business taxes, therefore the calculated tax incomes were given negative signs. Tax rates increases were adjusted to the election cycles.

For calculations on building taxes, it was assumed that the system of taxation based on floor area would remain in effect. Tax rates increases were adjusted to the election cycles, and the two-year exemptions were taken into account here as well.

Since as things stand now, the city will have no expenditures on the industrial park from 1998, in each of the nine years after that, the city will post profit. There were two price indexes used; under the slower scenario and conditions outlined above, the city will have an income of Ft 525 million up until the year 2007. This means that if no

² The city declared that they would not withdraw any dividends from the IP. They will probably lengthen this period this year by an additional 5-year period.

³ In both cases we adjusted the figures by a 0.7 factor, which gives the actual job estimations in Győr.

new businesses settle in the industrial park, the city's investments will not return during the planned 15 years (see Exhibit 1).
Under the faster scenario on the other hand, investments will return as early as the year 2003 even if no new businesses come in the industrial park (Exhibit 2).

The lessons learned from the "Amoeba" Industrial Park Program

1. A local government can only undertake to participate in a program of such magnitude if they are able to minimise the financial risks involved, which can only be achieved through the involvement of partners with large capital. Sample City managed to do that, but the city still has to invest more than half billion forints in the program.
2. The key element of the project is to ensure the site. If the site is not in the ownership of the local governments, it is very important to form a company to manage the industrial park, and to come to agreement as soon as possible with the owner(s) of the land. If the land belongs to several owners, options contracts should be made. But even in that case, the local government, or rather the investor IP company had better acquire the land and settle the ownership before the options contracts that were made for the land for phases other than Phase I expire.
3. The success of the project depends largely on the degree to which the city (local government) consider the project as its "own child". It is primarily the city that can create an image for the industrial park. If the local government do not feel that way, the project will be very difficult to introduce in the market.
4. An inappropriate pricing strategy may repel possible investors and completely exclude local businesses from the industrial park.
5. If the strategy to invite small- and medium-sized companies to the park is changed and large companies are preferred, the industrial park could be sold relatively quickly, but the expected and estimated number of jobs would not be created, which would also reduce the benefits that are to compensate the costs by the city.
6. There are always a large number of businesses that show interest, but only a few of them will actually settle. All businesses making inquiries should be maintained, possibly on computer. That will provide the opportunity to get a clear picture on the demands in terms of land-size, activities, technology, etc., and therefore will help making decisions on which companies should be contacted again.
7. To "fill up" the industrial park with businesses is not a rapid process. If businesses come slowly, that should not necessarily be considered as a failure, since the life-time of such programs is meant to be 10-15-20 years. If land sales are slow, that can be a sign of bad management, but to introduce the industrial park in the market in itself takes time. The speed of land sales, however, was also influenced by external factors, including a recession in Western-Europe, and that the need for the industrial park program is not included in the central government's policy yet. A slow growth characterises the developed countries now, and the government is dealing with the possibility of industrial parks. As a result of that a fierce competition may evolve in the supply of industrial parks in Hungary.

Table 1. Information on businesses housed by "Amoeba" Industrial Park

Basic Information

Founder	Country	Activity	Number of month of implementing the investment project	Start of manufacturing activity	Purchased land	Of this covered	Optional land
					(m2)		
Textil G.m.b.H.	A	textile manufacturing	5 months	1993.07.01.	8,000	3,000	7,000
Auto Komponent G.m.b.H.	D	spare parts manufacturing	12 months	1994.03.01.	15,000	5,000	10,000
Spedition G.m.b.H.	A	hauling	9 months	1996.01.01.	12,000	3,000	8,000
Electronics Co.	NL	spare parts manufacturing	12 months	1996.07.01.	80,000	15,000	70,000
Trade Co.	GB	storing	7 months	1996.10.01.	5,000	1,000	-
Csomagolástechnika Kft. (Packaging Technology Ltd.)	H	special packaging	6 months	1997.06.01.	7,000	3,000	3,000
Pneumatika Kft.	H	spare parts manufacturing	8 months	1997.09.01.	5,000	2,000	5,000
Innovációs központ (Innovation Center)	H	Research + Development products and services	6 months	1998.01.01.	10,000	2,000	-

Employment

Founder	Number of Persons Employed			Number of planned shifts	Organizer of Investment	(General) planner's headquarters	(General) contractor	Value of investment
	initial	current	planned					
Textil G.m.b.H.	50	80	150	3	A	A	Sample Citys	25.0 m ATS
Auto Komponent G.m.b.H.	40	40	160	2	D	Sample City	Sample City	50.0 m DM
Spedition G.m.b.H.	15	25	30	1	other domestic	other domestic	other domestic	40.0 m ATS
Electronics Co.	50	150	300	2	NL	NL	Sample City	80.0 m NLG
Trade Co.	40	40	100	2	GB	Sample City	Sample City	1.5 m GBP

14

Csomagolástechnika Kft. (Packaging Technology Ltd.)	30	..	60	1	Sample City	Sample City	Sample City	250 m HUF
Pneumatika Kft	50	..	150	1	Sample City	Sample City	???	200 m HUF
Innovációs központ (Innovation Center)	25	..	160	1	Sample City	other domestic	???	300 m HUF

Source: Industrial Park Ltd.

\\Server\project\budget\handouts\dec96\ritu\CBCase1-e.doc

Table 2 Cost Benefit Analysis of "Antocba" Industrial Park (From the point of view of Sample City Municipality)

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Összesen ⁶
Input (thousand HUF)	110000	210000	157500	37800	27200	32150	20000	30000	0	0	0	0	0	0	0	0	0	624650
Planning	5000	7000																12000
Expert fees	2000	3000																5000
Land purchase	40000																	40000
Land servicing	3000																	3000
Cash contribution for the foundation of IP Ltd	60000																	60000
Cash provision for IP Ltd ¹		200000	100000															300000
Debt amortization			35000	25000	20000	20000												100000
Interest on loans			22500	12800	7200	150												42650
Supporting local business ²						12000												12000
Grants for the incubator house							20000	30000										50000
Total at 1992 prices I	148500	210000	128571	25974	14579	14125	7322	9153	0	0	0	0	0	0	0	0	0	
Total at 1992 prices II	148500	210000	128571	25974	14579	14125	7641	10612	0	0	0	0	0	0	0	0	0	
Benefits (thousand HUF)	409	103216	14205	15219	59923	272745	43546	64224	89194	120303	146457	174296	213591	242599	264630	245778	306470	2376510
Loans taken		100000																
Dividend of IP Ltd					-10000	-2000	-2000	-2500	-2500	-3000	-3000	-3500	-3500	-4000	-4000	-4500	-4500	-49000
Partial payment of interests by IP Ltd ³				6400	3600													10000
Repayment of loans ⁴					50000													50000
Increasing the equity of the Sample City at IP Ltd						250000												250000
Estimated shared PFI	139	1954	1796	1517	2489	4160	7487	8943	9395	11711	15844	19434	23681	26804	29684	32834	34885	232758
Estimated normative grants	77	1106	2729	2179	3306	6065	11916	12363	13949	17198	23307	28647	35692	39790	43489	4855	52067	298766
Saved income supplement benefit	0	0	7090	5668	8941	15288	31709	34780	46570	56070	72794	86147	101241	111360	120179	129334	133082	960154
Business tax revenues	193	155	2650	-125	1666	-168	-4246	8867	18810	31470	30252	35108	47216	54155	56288	64264	71946	418202
Building tax revenues	0	0	-60	-320	-80	-300	-1350	1770	2970	6860	7260	8160	9260	14490	18990	18990	18990	105930
Total at 1992 prices I	552	103216	11596	10458	32118	119827	15913	19595	22677	25490	25859	25645	26189	24788	22532	18198	19732	
Total at 1992 prices II	552	103216	11596	10458	32118	119827	16636	22718	29765	38236	44331	50245	58641	63433	65898	59421	71937	
Balance I	-147948	-106784	-116975	-15516	17539	105703	8621	10442	22677	25490	25859	25645	26189	24788	22532	18198	19732	
Balance II	147948	106784	116975	15516	17539	105703	8995	12106	29765	38236	44331	50245	58641	63433	65898	59421	71937	
Inflation I ⁵	135,0	123,0	122,5	118,8	128,2	122,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	120,0	115,0	115,0	
CPI I - 1996	74,1	100,0	122,5	145,5	186,6	227,6	273,1	327,8	393,3	472,0	566,4	679,7	815,6	978,7	1174,4	1350,6	1553,2	
Inflation II ⁵	135,0	123,0	122,5	118,8	128,2	122,0	115,0	108,0	106,0	105,0	105,0	105,0	105,0	105,0	105,0	103,0	103,0	
CPI II - 1996	74,1	100,0	122,5	145,5	186,6	227,6	261,8	282,7	299,7	314,6	330,4	346,9	364,2	382,4	401,6	413,6	426,0	
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	

¹ Cash transfer to IP Ltd for building the infrastructure of Industrial Park (interest free loan), of which IP Ltd repaid HUF 5 M in 1995

The equity of IP Ltd was increased with the rest at the beginning of 1996

² In 1991 and 1995 IP Ltd paid half of the due interests on loan

At the beginning of 1996 Sample City repaid the rest of the installment before maturity. Therefore the interest due in 1996 decreased significantly

³ To ensure better land prices

⁴ Till 1994 IP Ltd was in net every year but the municipality always kept its dividend in the firm. This decision is expected to be extended for five more years in 1996

⁵ At current prices

⁶ Inflation I - The "steering through economic" Inflation II - The "Quick growth scenario" Source: Hungary - Restructuring and long term growth: Country study by the World Bank, Washington D.C. September 1995

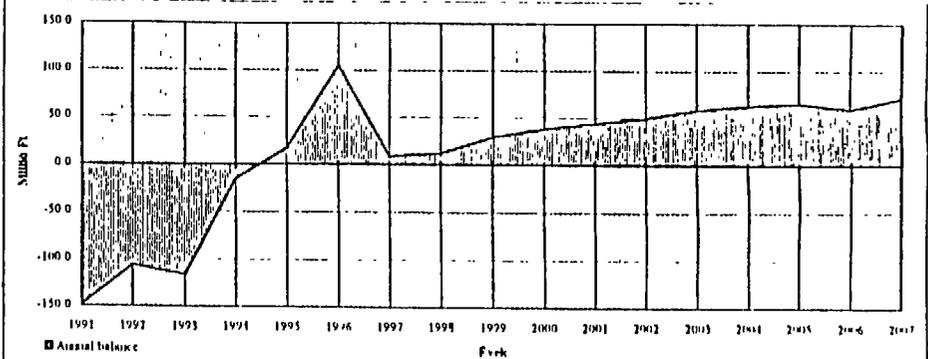
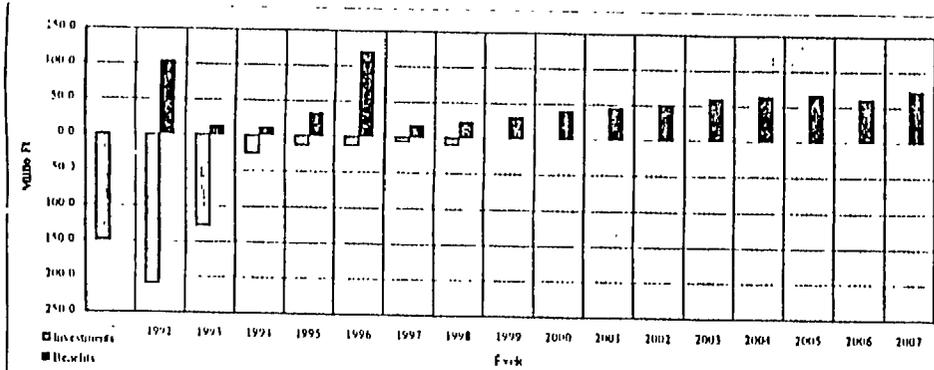
Source: Financial reports of IP Ltd and Sample City

BEST AVAILABLE COPY

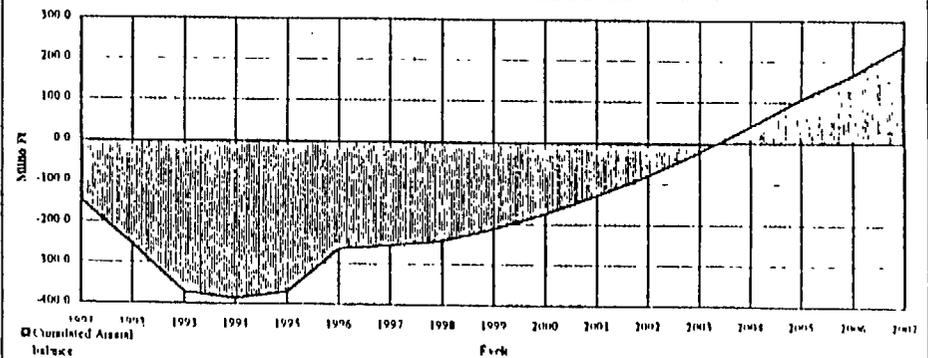
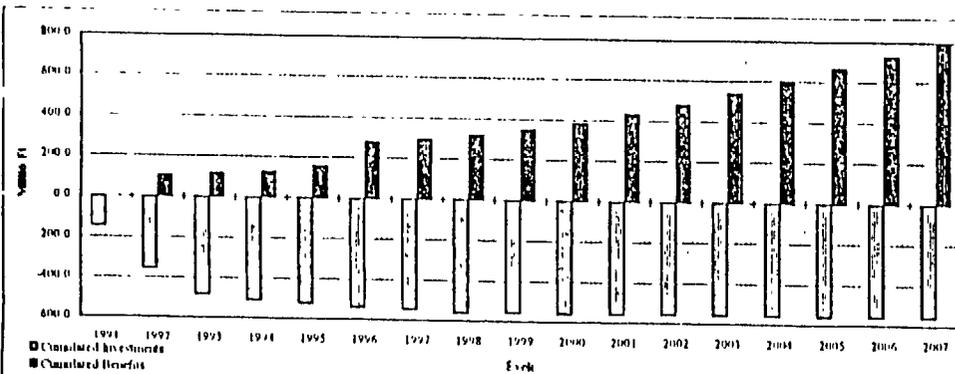
142

Figure 2 Cost benefit analysis of "Amöba" Industrial parc program Scenario 1

Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Investments	-148.5	-210.0	-128.6	-26.0	-14.6	-14.1	-7.6	-10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benefits	0.6	103.2	11.6	10.5	32.1	119.8	16.6	22.7	29.8	38.2	44.3	50.2	58.6	63.4	65.9	59.4	71.9
Annual balance	-147.9	-106.8	-117.0	-15.5	17.5	105.7	9.0	12.1	29.8	38.2	44.3	50.2	58.6	63.4	65.9	59.4	71.9



Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cumulated Investments	-148.5	-358.5	-487.1	-513.0	-527.6	-541.7	-549.4	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0	-560.0
Cumulated Benefits	0.6	103.8	115.4	125.8	157.9	277.8	294.4	317.1	346.9	385.1	429.5	479.7	538.3	601.8	667.7	727.1	799.0
Cumulated Annual balance	-147.9	-254.7	-371.7	-387.2	-369.7	-264.0	-255.0	-242.9	-213.1	-174.9	-130.5	-80.3	-21.7	41.8	107.7	167.1	239.0

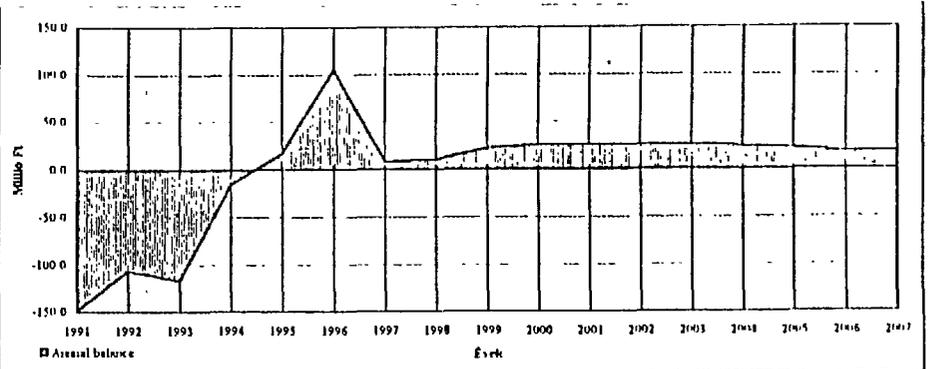
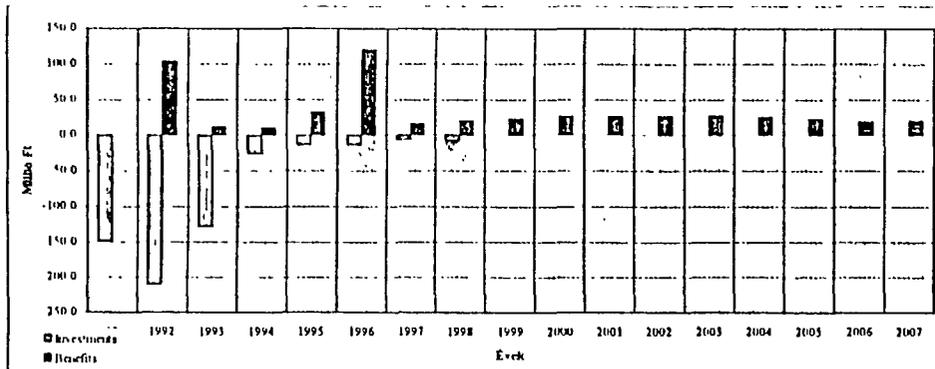


BEST AVAILABLE COPY

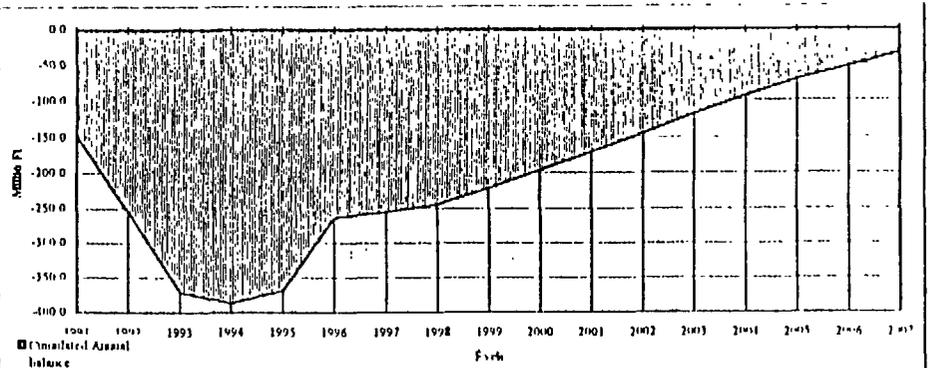
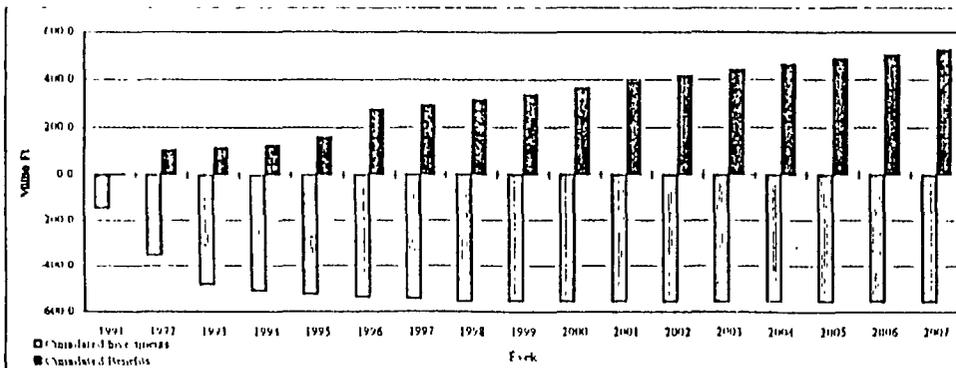
EPB

Figure 2 Cost benefit analysis of "Amöba" Industrial park program Scenario 2

Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Investments	-148.5	-210.0	-128.6	-26.0	-14.6	-14.1	-7.3	-9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Benefits	0.6	103.2	11.6	10.5	32.1	119.8	15.9	19.6	22.7	25.5	25.9	25.6	26.2	24.8	22.5	18.2	19.7
Annual balance	-147.9	-106.8	117.0	-15.5	17.5	105.7	8.6	10.4	22.7	25.5	25.9	25.6	26.2	24.8	22.5	18.2	19.7



Years	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Cumulated Investments	-148.5	-358.5	-487.1	-513.0	-527.6	-541.7	-549.1	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2	-558.2
Cumulated Benefits	0.6	103.8	115.4	125.8	157.9	277.8	293.7	313.3	336.0	361.5	387.3	413.0	439.2	464.0	486.5	504.7	524.4
Cumulated Annual balance	-147.9	-254.7	-371.7	-387.2	-369.7	-264.0	-255.4	-244.9	-222.2	-196.8	-170.9	-145.2	-119.1	-94.3	-71.7	-53.5	-33.8



A Discussion of Financing Alternatives in Municipal Capital Budgeting

by *Andras Figvari*

The term **program budgeting** includes decisions on *capital investments and financing*. A well-founded capital budgeting process assumes continuous budget analysis and preparation of middle- and long-term forecasts for some sections of the budget. The overall ability for financing under municipal capital budgeting depends on the capabilities of the local government (what types of projects they can embark on) as well as the system of funds control. The issues I think most important under the current conditions of the municipal system in Hungary will be discussed below. I want to point out here that capital budgeting decisions are *closely related*, in terms of content and methodology, to those learnt earlier on forecasting for municipal budgeting.

1. Possible funds for financing

The following major funds are available in Hungary for capital investments:

- 1.1 The net operating income of the current budget. The term "net operating income" and the factors that affect it have been discussed in the paper on CLF.
- 1.2 Various capital incomes, including the typical ones as follows:
 - various funds coming from the state budget, such as the targeted and addressed subsidies and various subsidies coming from various segregated funds;
 - funds coming from the sale and use of own property.
- 1.3 Borrowed funds. Some issues of loan borrowing will be discussed later.
- 1.4 Funds transferred and invested for good. The most typical example to that is a local government that establishes an organisation separate from its municipal institutions and implements the project in question through that organisation.
- 1.5 Other funds (such as VAT recovery from projects, obtaining international aids, etc., that need careful consideration)

2. Long term funding needs of various projects

When making decisions on financing under municipal capital budgeting, not only the feasibility of financing the capital investment itself should be considered, but the finished project's current budget and debt servicing, expenditure-income implications as well. From that perspective, programs, projects and investments to be implemented can be classified as follows:

2.1 Those projects that, after implemented, need operating funds (subsidies). Under the present domestic conditions these are typically the educational, cultural and health projects, which once implemented represent a substantial extra burden on the operating budget. Under today's practice, many problems arise because this factor is not taken into consideration either in central or local budgeting.

2.2 Those projects that, after implemented, generate incomes that are easy to forecast. Such projects are worth financing by using external funds (loans and/or capital), since these incomes can cover the yield obligations on funds used. In a case like that, the *key issue* to decision-making is to make the most possible accurate forecasts on incomes.

2.3 Projects with neutral effects. Those projects fall into that category that may substantially improve the quality of life in the community though, but no financial costs and incomes can be attributed to them. Such projects can be, for instance, the development of the road network in the community, certain noise control projects, etc. Such projects will undoubtedly provide more comforts to citizens (and possibly compensate some negative effects), but under the present situation in Hungary no extra taxes can be collected for them and their maintenance represent no significant extra burden on the operating budget.

Selecting one of these types of projects also means, expressly or inherently, choosing among financing alternatives. This aspect should be remembered when making capital investment decisions, because the addressed and targeted subsidy system of the past years give a live example to such types of trap situations. "Free funds" (state subsidies) tempted many decision-makers to opt for capital investments that they have not appropriately thought over from a financing perspective (either). The future financing needs from the operating budget of projects implemented (such as education and health care) as well as an overestimation of demand with ability to pay for the given services (e.g. sewage system, gas system) can easily lead to situations where the "free" funds suddenly become very expensive.

Similarly, we can fall into the trap of optical illusion many times when we fail to calculate with the costs of working capital. That is not free money either. When using external capital for service delivery either through privatisation or a new capital investment, local governments will have to take into account its yield consequences. If not realised, they can cause large pressure on the

operating budget, either because of arising demands for subsidies or capital withdrawal from the area and reduction in activities.

3. The basic dilemma to financing the capital budget

Most of the municipal capital investments and projects are characterised by very high costs of implementation, and that the life-time of the project implemented is rather long (measurable in decades even). In theory it is possible to get the population currently living in the community to pay for the improved services, but this solution cannot always be applied due to limitations on ability to pay taxes and political considerations. From these characteristics comes the dilemma of financing - that the net operating income of a short period is not sufficient to implement the project and/or it would be unfair to have the investment paid by the current generation or the people who live there currently. The implementation of such investments necessitate that costs be spread in time (and possibly in space). In practice, all the municipal capital investments are financed from *mixed funds*. Specific types of projects, however, can be selected by considering which ones can be implemented in one way, which ones in the other. The typical tool for spreading costs over time is borrowing, and for spreading costs over space is state subsidies. A loan should be of long enough term in order to fulfil that function and its repayment should be made from such municipal incomes that come from extra tax incomes generated directly or indirectly by the overall development of the community, or from the operation of a specific project. The former source may simply be *tax surplus* due to an increased migration into or increased business activities in the community, or possibly some special *new* local taxes (e.g. a tax for increased value levied on property); the latter source can be some specific fee income.

4. The major considerations for financing decisions

4.1 Selecting the type of project

In practice, decisions on capital investment and those on financing cannot be separated rigidly from each other. The decision-makers should not only do a *cost benefit* analysis for the project itself but should also consider the long-term financing possibilities of the local government.

4.2 Selecting the organisation to implement the project

A special, and many times ignored, aspect of decisions on financing is to determine the specific organisation to implement the project. This organisation can, in theory, be the mayor's office, one of the municipal institutions, a non-profit organisation, a company under own or mixed ownership, a company set up for the implementation of the project, a concession or other private company. To select the right form of organisation is important because the

organisation should provide an optimum framework for future operation (that is in compliance with legislations and can be controlled by the decision-makers, etc.), and even more importantly because of the possible savings in tax payments (VAT and corporation tax), depending on current regulations, during implementation and operations alike.

4.3 Selecting the right type of external funds

In addition to loans, capital and concessions can be used as external funds. The two latter options are only possible for some specific services, of course. As a method for selecting from financing alternatives, the net present value rule can be used here, too.

5. Some issues of borrowing by municipalities

Local governments can borrow by *taking out loans* from banks or *issuing bonds*. After the municipal system had been set up, local governments received independence on that. The present funds control logic, the large proportion of incomes coming from central sources, and the nature of the overall income structure made it necessary to put a limit on municipal commitments. This limitation was imposed first under the Supplementary Central Budget for 1995, than by repeating that section in the Law on Local Governments. In addition to setting this upper limit, a further tightening was when the rule was made that no state contributions or basic assets of local governments can be offered as collateral. An additional important regulation on the issue is the Law on Bankruptcy procedures of Local Governments. The limitation on municipal commitments was primarily aimed at pushing local governments out of the loans market. Borrowing for capital investment purposes, however is not part of this limitation, provided the borrower is not the local government but a company set up by it and the lender does not require the loan to be guaranteed by the local government.

In Hungary, several factors may hinder that municipal capital investments can be financed from loans (either bank loans or bonds). Some of them are the following:

- the number of creditworthy local governments is declining due to the overall financial situation. People say that banks are ready to make loans to municipalities that do not need loans, and reluctant to make loans to those who do need them.
- there are several obstacles to using foreign funds. On one hand, the overall credit rating of the country may limit the conditions that local governments can achieve, on the other hand local governments cannot manage exchange rate risks. Finally, most of the foreign funds that seem to be of favourable

terms include some restrictions (e.g. the lender selects the supplier and other additional charges) that make the total costs of borrowing unfavourable.

- reserve on the part of political and financial managers of local governments.

It is true that taking out a loan may prove a *sound financing decision* after careful considerations are made. The net present value calculations make sense not only for decisions on capital investments but on financing as well. If the present value of the project when implemented from loans exceeds the present value of charges on borrowings or equals to it, then it is worth taking out loans. This simple rule, however, is not so easy to implement in practice. The charges on borrowings are relatively easy to quantify, but benefits are not.

A similar analysis is worth making as to whether the project will be cheaper to finance from assets sold now or from loans. In such an analysis the present value of the charges on the loan and that of the current and future sale price of the asset are relatively easy to calculate, and therefore the net present value of the transaction can be quantified, too.

Another possibility for making comparisons is to compare the costs of *postponement* of the capital investment necessary (e.g. increases in costs and other extra expenditures due to later implementation) to charges on borrowings. If the costs of the given projects will grow rapidly (e.g. due to an inflation in the construction industry that is higher than the consumer price index) then it may easily happen that a loan on which interests accrue at the consumer price index is specifically appropriate.

When making a decision on using loan funds, the following considerations should be made:

5.1 *The currency of the loan.* The question here goes like "forints of foreign currency?". That is an important issue because under the present domestic practice foreign loans are wide-spread and they seem very attractive at first glance. For local governments it can categorically be stated that since they have no tools to manage exchange rate risks, this method is not feasible. It is also true, on the other hand, that the forint loan supply today is rather poor in terms of both loan period and interest conditions.

5.2 *The instrument applied.* The question here goes like "bonds or bank loans?". For long-term borrowing, issuing bonds is the better instrument in theory. Since bonds are tradable, it is easier to ensure the long term, and there are techniques available for interest rate risk management. The problem with bonds is that in addition to the fact that local governments are being pushed out of the lending market, as mentioned before, bonds are more expensive to issue, there are no credit rating institutions and there is a low liquidity in the secondary market.

Server project budget handouts dec96 ritu finalt-e.doc

Local Government General Obligation Rating Guidelines

Analysts

Ruth M. Levine
(212) 908-0605

Richard J. Raphael
(212) 908-0506

Amy S. Doppelt
(212) 908-0514

Claire G. Cohen
(212) 908-0552

Informational Requirements

- Preliminary official statement.
- Most recent three years' audited financial statements.
- Current and/or most recent year's projected financial results.
- Current operating budget.
- Capital improvement plan, if prepared.
- Authorizing resolution/legislation, where applicable.
- Legal opinion.
- Investment policy.
- Pension fund actuarial report, if available.

Summary

To reach a general obligation bond rating, Fitch evaluates four factors in determining the creditworthiness of the municipal entity — debt, financial performance, the government's management, and the local economy. The process involves analyzing trends in these areas; identifying, where possible, areas of future financial obligation or exposure; and assigning a bond rating based on the conclusions drawn. The four elements are interactive. For instance, while an entity may have a vibrant and wealthy economy, management concerns, such as financial mismanagement or stringent tax rate limits, may offset this potentially strong ability to meet obligations. In turn, a weak economy may be offset by other strengths.

Debt analysis begins with a review of debt structure, including amortization, and key debt ratios. The types and proportions of debt utilized (i.e. GO, lease, and special tax) and the payment structure are noted. Analysis of debt burden focuses on overall ratios that include the debt of overlapping and underlying units. While direct debt ratios indicate the burden on the entity of its own capital costs, overall ratios best measure the debt that must be serviced by the community's tax base. Debt per capita is viewed as

an initial indicator of local debt burden. This measure indicates the amount of debt each resident would have to directly support if the tax base lacked a corporate/industrial presence; also, it does not give consideration to the residents' wealth and income. Most indicative of local debt burden is overall debt as a percentage of market value of the property tax base. This measure, unlike per capita debt, considers overall wealth of the tax base and accounts for variations in the tax base's residential and commercial/industrial composition and mix and, by extension, who pays the debt.

GO bonds may be supported by an unlimited property tax pledge, a limited property tax pledge, or a combination of a special revenue and property tax pledge. Fitch does not automatically distinguish between the rating of the GO debt backed by limited and unlimited tax pledges; rather, each instance is analyzed to determine available margin, resistance to tax rate increases, and other factors. The use of a capital improvement plan (CIP) is viewed favorably and reviewed in the context of potential impact on the debt ratios. Generally, the condition of the infrastructure (as ascertained through discussion with the issuer and review of supporting documentation and, in certain circumstances, as observed through visual inspection by the analyst) and whether the CIP addresses known or anticipated needs is considered.

Financial analysis focuses on operating results over time. Historical operating results are reviewed for the matching of recurring expenditures with recurring revenues, the generating of operating surpluses, and the minimal use of "one-shots" (revenue that is unlikely to be realized year after year) to fund recurring expenditures. Also reviewed is the judicious use of fund balance, such as use for one-time expenditures and emergency situations, and its use in any large amount for ongoing operations. Attention is paid to expenditure growth rates and the community's ability to control spending, the latter including whether expenditures are nondiscretionary or within the entity's control. Attention is similarly paid to the breadth of the services (whether mandated or otherwise) traditionally delivered by the government. Revenue mix and volatility are considered, as are limitations (both legal and practical) on the ability to raise taxes and other revenues. Balance sheet analysis focuses on liquidity and fund balance levels and their trends.

The evaluation of management is an integral part of the analysis as management affects debt, finances, and the economy. Effective budgetary monitoring, capital planning, and sound financial reporting are indicators of management quality. Planning and recognition of forward challenges, such as through multiyear revenue and expenditure forecasts and debt affordability guidelines, as well as advance identification of possible solutions, are viewed favorably. Other management considerations include investment policy, contingent liabilities, pension funding, and property assessment policy. Further considerations may include the tenor of the taxpayer and labor environments. Also considered is the governmental structure itself and the relationship between the entity and various stakeholder groups. While difficult to assess and subject to change, political factors can affect an entity's ability to act effectively and efficiently.

Economic analysis considers the capacity of the community's economic base to support ongoing operations and repayment of debt. The process begins with a review of why the community exists and what makes it function. The depth and breadth of the employment and tax bases are reviewed, as are historical economic trends and the outlook for ongoing growth. Also reviewed are trends in population, tax base valuation, building permits, and retail sales. Per capita income relative to area, state, and national averages is ascertained. The reasons that a particular community attracts or loses population are considered, including the tax burden and the quality and type of amenities and services offered, such as recreational, cultural, and educational facilities. Also evaluated is the community's ability to manage growth-generated demands, including the ability to keep up with rising infrastructure needs.

Debt

Debt analysis begins with a review of debt structure, including amortization, and key ratios. Trend in debt levels and the impact of future capital needs and plans are considered. The existence of policies and practices relating to debt management, affordability, and planning is viewed positively.

Tax-Supported Debt: Tax-supported debt is all obligations of an entity paid from tax sources, including GO bonds, special tax bonds (such as sales and excise tax bonds), lease-secured obligations, and capital leases (see Fitch Research on "Municipal Lease Ratings Guidelines"). Self-support credit is given for tax-supported debt if debt service has been paid from an enterprise-type operation. Such debt generally is deducted in the calculation of net

tax-supported debt only if the user-charge supported system has been paying all its expenditures, including debt service, from nontax sources for at least three consecutive years.

Nationwide, most local tax-supported debt is GO, payable from either limited or unlimited property taxes, although in some areas, lease debt dominates. Where the debt service is to be paid from a limited tax, Fitch considers how much margin remains within the limitation, what other expenditures the tax supports, and the entity's overall financial flexibility. Generally, where significant additional margin exists or where the entity has demonstrated a historical financial flexibility to operate within the limitation, Fitch does not distinguish between the rating assigned to debt supported by the limited and unlimited GO tax pledges.

Structure and Trends: Average debt maturity schedule is defined as 25% principal payout in five years and 50% in 10 years; rapid amortization is more than 35% in five years and 60% in 10 years. Debt structure is reviewed to ensure that the length of the bonds is appropriately matched to the useful life of the assets being financed. The structure of any refunding bond issue is analyzed to determine the impact on the issuer's overall amortization and payment structure, particularly if current debt obligations are pushed to the future to achieve short-term budget relief.

The level of debt service as a percentage of budget affects overall financial flexibility. All things being equal, limited and single-purpose governments, such as park districts, have higher debt service levels proportionate to their budgets than governments with a broader array of purposes, thereby making absolute comparisons difficult. Municipalities that also finance schools tend to have a higher debt service level. Nevertheless, debt service above 10% of expenditures or revenues constitutes a level at which budgetary competition is a significant consideration. Concern over a high debt service level may be mitigated to the extent that amortization is above average and the debt service structure is declining as opposed to backloaded or level.

The trend in debt in relation to resources is analyzed. Sustained growth in debt (i.e. well beyond tax base growth) may ultimately overburden a tax base and reduce economic viability. Similarly, rapid growth in an entity's debt service obligation may strain budget and tax resources and reduce flexibility. Conversely, debt reduction generates tax and economic capacity to the extent that infrastructure necessary for economic growth is not underfunded. The mix of fixed- and variable-rate debt is reviewed. Generally, variable-rate debt in excess of 5%--20% of total direct debt is not considered prudent.

Debt Ratios: Various ratios are used to measure the burden of debt on a community. These measures are direct

tax-supported debt per capita and as a percentage of market value of taxable property, and overall tax-supported debt per capita and as a percentage of market value. Direct debt ratios look solely at the entity's debt, while overall ratios include the debt of overlapping or underlying units, as these ratios best reflect the overall burden borne by a community.

Overall debt per capita is an initial indicator of debt burden. It does not account for variations in the residential and commercial/industrial composition and mix of the tax base and, by extension, who pays the debt, nor does it measure ability to pay, i.e. the wealth of the tax base. More indicative of local debt burden is overall debt as a percentage of market value of the property tax base. While there are differences in the mix of funding sources for municipal governments, in aggregate, property taxes continue to be the major source of local government own-source revenue. Also, while it is noted that there are differences in the frequency with which the property values are updated, debt as a percentage of market value remains a key indicator of comparability.

The average range of total debt as a percentage of market value is 2%--5%. Below 2% is low. Above 6% the ratio trends toward high, with 10% a level above which affordability questions are raised. At both extremes, distinctions are made depending on where the community is in its life cycle. For example, a growing community may have a high debt burden because it is expanding infrastructure to meet existing and reasonably anticipated needs resulting from population gains and economic development. In this instance, especial attention will be paid to the rate of growth, the degree to which infrastructure development is matched to actual and reasonably expected demands, and the degree to which the capital plan can be scaled back if development slows or fails to materialize. In contrast, a mature community may have a high debt burden because of a shrinking tax base. Here, particular consideration is given to historical and projected tax base valuation trends, the reported condition of the infrastructure, and the need to replace and rehabilitate it. For a community with a stagnant or declining tax base, additional spending needs can be significantly burdensome. Again in contrast, a mature community may have a lower debt burden because limited tax dollars are not directed to rehabilitation or replacement of aging infrastructure. Accordingly the reasons for low debt burden will be reviewed, including such factors as deferred maintenance and pay-as-you-go capital funding.

Capital Plans Analysis: Debt factors are considered within the context of the entity's infrastructure needs and capital plans. Debt levels may be currently low however future capital projects may significantly increase debt ratios. In turn, debt levels may be low due to statutory debt

limits or onerous voter approval requirements, piecemeal infrastructure funding, or severe underfunding that could ultimately inhibit economic development.

Accordingly, the entity's CIP is analyzed. The existence of a formal multiyear CIP is viewed favorably. Generally, the condition of the infrastructure and whether or not the CIP in some way addresses known or anticipated needs (e.g. school building construction or court-ordered detention facilities) is considered in the context of potential impact on the debt ratios. Also considered is the degree to which the CIP addresses regulatory compliance needs, such as water and wastewater treatment facilities, whether or not these are to be funded with tax-supported debt. The reliability of funding sources in the CIP is considered, including overreliance on uncertain items, such as developer fees. Demonstrated ability to use GO bonds, the strongest type of security, is viewed favorably. Overreliance on leases or special tax obligations is closely scrutinized, as debt service on these usurps tax resources supporting the GO security. In the case of lease debt, particular attention is paid to those jurisdictions in which the use of this vehicle is either novel or in response to actual or anticipated voter defeat of proposed GO debt. A history of significant pay-as-you-go capital funding is viewed positively; it reduces debt levels and constitutes a point of budgetary flexibility. Also, in growing communities, the pace and manner in which growth-related infrastructure is funded is analyzed. While underfunding infrastructure can inhibit development as mentioned, debt-funding infrastructure too far in advance of tax base growth causes otherwise higher debt ratios and intensifies financial and competitive risks if development slows. Accordingly, the CIP is analyzed for its flexibility and ability to be scaled down in the event projected growth slows or fails to occur.

In recent years, more municipalities have implemented debt affordability policy guidelines establishing debt issuance limitations within existing legal limits. Such guidelines should be incorporated, or at least considered, in developing a CIP. Principal indicators that have been used to limit debt issuance include debt service as a percentage of operating revenues or expenditures and direct debt as a percentage of the property tax base or personal income base. Where such guidelines are adhered to over time, and broadly used in the budget, planning, and general decision-making processes, they are viewed favorably as a planning tool.

Finances

Financial performance reflects, in some manner, the entity's debt, economic trends, and management quality. Analysis of finances focuses on consistency of operating results over time, as well as fund balance levels relative to expenditures or revenues. Evaluating the consistency of operations en-

tails reviewing historical performance for the matching of recurring expenditures with recurring revenues, the generating of operating surpluses, and the minimal use of nonrecurring resources (one-shots) to fund recurring expenditures.

Particular attention is focused on both the actual expenditure growth rates and the community's ability to manage such growth. The latter entails the nature of the expenditure increases. For example, mandated functions (e.g. indigent health care and welfare services) are largely beyond the control of the local government. In contrast, fixed costs (such as debt service and pension funding) and discretionary service enhancements (e.g. parks, recreation, or capital outlay) are within the entity's control. Growth in labor costs, both salaries and benefits, are analyzed within the context of growth rates locked in as a result of multiyear settlements. Major spending items are reviewed, including transfers out to subsidize enterprises such as wastewater and solid waste facilities or public hospitals.

Revenue sources are reviewed for volatility and diversity. Property tax revenues tend to be the most predictable revenue source. However, diversity of revenues can reduce burden on the property tax base, and, while more volatile, the less predictable sales and excise taxes and payroll taxes often are able to access broader and deeper economic wealth. For instance, through a payroll tax, an older, poorer center city can tap into the tax base residing outside the city but working within its borders. Also noted is the degree to which operations depend on transfers in from uncertain sources, such as government grants or community enterprises that are vulnerable to potential market forces (e.g. municipal electric utilities).

Where key revenues are potentially volatile, conservative revenue forecasting and budgeting is particularly critical, as is the monitoring of these revenues and the taking of timely corrective actions when problems emerge. Management's financial capabilities are determined, with particular emphasis on accuracy of revenue forecasting, ongoing budget monitoring, and ability to take midyear corrective measures as revenues or expenditures perform differently than budget projections. The ability to make successful midyear adjustments is a special concern for recession-sensitive operations with economically sensitive revenues or large social service functions, such as those of many counties.

Limitations on tax and revenue raising are examined. Where the tax is limited, consideration is given to how much margin remains, as well as to how the entity has historically operated within the limit. Alternate revenue resources, if any, are reviewed, as is the entity's willingness to consider other revenue enhancements. In recent years, numerous property tax limits have been instituted through state statute or referendum. In the instance of property tax levy increase limits, allowance is often given for limited

inflation growth and new construction, and debt service may or may not be excluded. Consideration is given to the entity's overall financial flexibility in determining the rating impact of such measures. The economic capacity to raise taxes is analyzed. Even where legal tax-raising capacity exists, the current anti-tax environment has generally made tax raising politically difficult. Significant attention is given to competitive tax levels and the government's general taxpayer/constituent climate. In a practical sense, especially since taxpayer resistance to tax increases is a strong and growing trend, even unlimited rate obligations have some natural tax rate ceiling. Consideration is also given to the nature of expenditure limits, particularly where debt service is included in the base. Also analyzed is the entity's ability to meet its ongoing needs within the limit's constraints.

Balance sheet analysis focuses on liquidity and fund balance levels as well as their trends. Current position (cash and investments less current liabilities and encumbrances) is reviewed, and the quality and trend of accounts receivable and interfund payables is analyzed. Because fund balance designations are discretionary and will vary among entities, unreserved fund balance is utilized for national comparative purposes. Generally, as a cushion against potential revenue and expenditure volatility, an unreserved fund balance equal to 5% of expenditures and transfers or current revenues and transfers is regarded as a sound level. However, this level may vary, as, for example, with regard to the timing of the locality's tax collection calendar. An entity with a July 1 fiscal year whose first tax revenues arrive Dec. 1 may have a substantially higher fund balance if the government chooses to self-fund its liquidity needs rather than issue short-term tax anticipation notes. An entity's current position is analyzed in conjunction with knowledge of its cash flow, including when taxes are received, how disbursements are timed, and how liquid are the receivables. The trend in cash, investments, and receivables (particularly payables due to and receivables due from other funds and related entities) is examined to determine if the general fund is being either drained or artificially supported by other funds.

Management

Sound financial status is the result of several factors, including an effective management structure and team. Actions such as budget monitoring, accurate forecasting, and timely revenue and spending adjustments reflect a management that is aware and generally in control. Sound debt management and utilization of multiyear CIPs is viewed favorably, as is the use of debt affordability planning (see *Capital Plans Analysis*, page 3).

Increasingly, governments are instituting multiyear revenue and expenditure projections that can provide a useful planning tool and avoid unnecessary surprises. Where

such projections are used as an integral part of the budget development process, they are viewed favorably by Fitch. Attaining the Government Finance Officers Association (GFOA) Certificate of Achievement for Financial Reporting is viewed positively, as is attaining the GFOA Distinguished Budget Presentation Award. GAAP-basis audits (unless in a state where another accounting basis is mandated) are preferred, although financial reporting on another basis will be accepted. Failure to produce financial reports within six months of the fiscal year end may have negative rating implications.

Other management considerations include investment policy, contingent liabilities, pension funding, and property reassessment practices. The entity's investment practices and portfolio are reviewed for the appropriateness of both relative to legally allowable investments, including participation in investment pools, the entity's resource capabilities, and cash flow needs. For example, a portfolio with some collateralized mortgage obligation exposure might be considered acceptable for a community with large investable balances (not all needed for current-year operations) and with full-time, trained personnel actively managing the investment portfolio. A similar portfolio might be inappropriate for a community with balances needed to fund current operations or where money management was not contracted out but rather was performed by nonspecialized personnel (see *Fitch Research on "Market Risk Guidelines for Municipal Issuers"*).

The degree to which an entity's pension program is funded and the trend in such funding is reviewed. Absent overfunding, annual pension contributions paid into the fund should be at least equal to or greater than benefits paid out such that the plan funding level is maintained or improved. Underfunding, absent a reasonable and consistently followed plan to improve the funding level, could have negative rating implications. An inadequately funded plan (as well as a pay-as-you-go plan) can be expected to result in substantial budgetary pressures in the long term.

Reassessment policies and practices are considered, including at what governmental level the assessments are made and whether the assessing entity maintains current values through periodic reassessments/reevaluations. Long periods between residential revaluations can be disruptive to taxpayers and governments, causing dramatic shifts in tax obligations among residential and other classes of taxpayers. Also, current assessments result in more accurate quantification of market value used in rendering debt ratios.

Management considerations may also include labor and taxpayer environments. A positive labor environment (i.e. one that is free of strife) can facilitate and sometimes broaden potential solutions to financial challenges. A difficult labor environment can limit budgetary options. Circumstances influencing arbitrated labor settlements are

considered. In this regard, review is made of recent employee compensation awards (both salary and benefits) and whether they were voluntary or imposed through arbitration. A negative taxpayer environment could include legislative measures to limit financial flexibility by restricting the government's legal ability to raise revenues.

Economy

Economic analysis considers the capacity of the community's economic base to support repayment of the debt, as well as the entity's other fiscal responsibilities. The process begins with a review of why the community exists and what makes it function. For instance, is it a self-contained municipality or a residential bedroom community whose employment base is in a center city? In all cases, what drives the economy is determined by reviewing the employment and taxpayer bases. Composition of the entity's employment base is analyzed, including specific employers and employment mix by major industry group. There is no substitute for diversity. Undue concentration by either employer or industry sector may be cause for concern. Overdependence on one taxpayer or one industry poses obvious risks. For example, the oil and gas sector tends to be more cyclical than other industries, and concentration substantially above the U.S. average can be a credit concern. The concentration concern may be partially offset by diversity within the sector. Also, manufacturing jobs tend to be higher paying than less cyclical sectors such as services and trade and generally create broader economic benefits to a community. Regarding major taxpayers/employers, the nature of their industries and outlooks is evaluated, as is the importance of the local facility to the company's total operations. Property taxpayer concentration of more than 5% for any one taxpayer or 30% for the top 10 taxpayers may require closer scrutiny.

Measurements of ability to pay are important credit factors. Per capita income, both absolute and relative to area, state, and national averages, is ascertained. Per capita market value of the property tax base is determined. Both factors are considered, as per capita income reflects residents' ability to pay while per capita market value also accounts for commercial/industrial presence (wealth) in the tax base. For a predominantly residential community's tax base to constitute the basis of an above-average GO rating, per capita income levels should be high. Alternatively, a strong and diverse commercial/industrial component in the tax base, i.e. in excess of 40%, can bolster an otherwise average residential income base, supporting an

above-average GO rating. Additionally, tax collection history is evaluated for both its reflection of the health of the economic base and budgetary implications. A precipitous decline in the current tax collection rate can reflect either a problem with a major taxpayer or the economy in general. Also, a chronically weak current tax collection rate, i.e. in the low 90% range, could indicate ongoing economic weaknesses, although it might also relate to the timing of how close tax payments become delinquent in relation to when the fiscal year ends. A consistently high total tax collection rate addresses this timing concern. Alternatively, a persistently low rate may indicate inattentive management or poor collection practices.

Also analyzed are historical economic trends, as well as the outlook for future growth, stability, or decline. Data elements reviewed include population, tax base valuation, building permits, employment, retail sales, and income. Whether infrastructure has kept current with growth is examined, as well as the entity's ability to handle continued development or to meet infrastructure needs if development slows or stops. Economic development is watched closely in terms of attracting and retaining business without straining community resources (such as through excessive tax breaks or debt issuance) for nonsustainable projects. The reasons that a particular community attracts or loses population or employers are considered, including the tax burden and the quality and type of amenities and services offered, such as recreational, cultural, and educational facilities. Understanding a community's strengths and weaknesses as it relates to these factors compared with those of other communities within a metropolitan area is important to the credit analysis.

Economic and growth trends are never constant and the degree of cyclicality is important, as wide swings in economic performance may stress an entity's overall financial posture. Generally, economies that are not overly concentrated in any one sector tend to be less volatile and pose less long-term risk. However, even within diversified economies, some of the volatile effects of cyclical economies can occur. In recent years, in regions with diversity, such as California and the Northeast, excessive growth spurts — often characterized by overheated construction and real estate sectors — have culminated in dramatic economic declines, resulting from underlying changes in the economic base. Therefore, increasing analytic attention is paid to the underlying basis of growth and whether its underpinnings appear to be fundamental and sustainable.

Copyright © 1995 by Fitch Investors Service, L.P. • One State Street Plaza, NY, NY 10004 • 212 975-9170 • 212 975-1500 • Fax: 212 480-4445 • Reproduction in whole or in part prohibited except by permission. Fitch ratings are based on information obtained from issuers, other obligors, underwriters, their experts, and other sources Fitch believes to be reliable. Fitch does not audit or verify the truth or accuracy of such information. Ratings may be changed, suspended, or withdrawn as a result of changes in, or the unavailability of, information or for other reasons. Ratings are not a recommendation to buy, sell, or hold any security. Ratings do not comment on the adequacy of market price, the suitability of any security for a particular investor, or the tax-exempt nature or taxability of payments made in respect to any security. Fitch receives fees from issuers, insurers, guarantors, other obligors, and indenture trustees for rating securities. Such fees generally vary from \$1,000 to \$750,000 per issue. In certain cases, Fitch will rate only a number of issues issued by a particular issuer or insured or guaranteed by a particular insurer or guarantor for a single annual fee. Such fees are expected to vary from \$10,000 to \$1,500,000. The assignment, publication, or dissemination of a rating by Fitch shall not constitute a consent by Fitch to use its name as an expert in connection with any related statement filed under the federal securities laws.

155

Water and Wastewater Revenue Bond Rating Guidelines

Analysts

Josephine Zeppieri, CFA
(212) 908-0575

Patricia M. Healy
(212) 908-0678

Overview

Public water and wastewater utilities have a relatively low-risk credit profile, and many exhibit at least average credit quality. They have retained monopoly control over their markets and do not face the same competitive pricing pressures experienced by public and private providers of electric and gas service. The utilities provide an essential service, are self-regulated with respect to rates, and often have access to low-cost capital provided by state revolving funds.

Partly offsetting an otherwise positive credit profile for this utility sector is a rising cost structure, largely dictated by nondiscretionary system improvements needed to comply with the Clean Water Act (CWA) and the Safe Drinking Water Act (SDWA) and their respective amendments. However, sizable capital investments made to comply with regulations have not had a marked impact on credit quality for utilities able to raise rates.

Some utilities have managed rate shock by phasing in projects so as to link rate increases to affordability. Moreover, while expenditures for capital programs designed to provide clean and safe water may strain the financial and political resources of public water/wastewater service providers, they are in the public interest and are likely to win public support in the long run.

This report reviews the qualitative and quantitative rating factors and criteria Fitch considers in evaluating water and wastewater revenue bond credit quality. The factors include management, service area demographics, rate structure, financial performance, and legal provisions. The many criteria evaluated for each factor often have overlapping implications. For example, high rates can be driven by capital programs that strain financial performance, mitigated in part by strong legal provisions. Although results are

February 10, 1997

FITCH
ESTABLISHED 1913

expressed in a single measure, the rating, every effort is made to take a balanced approach to the rating process.

Wholesale vs. Retail Systems

While the same rating factors and criteria apply in assessing credit quality for all types of systems, there are some major differences among the systems.

A wholesale system provides a specific utility service to a number of smaller municipalities and generally does not provide distribution of water to and retrieval of wastewater from the individual customer. The terms of a wholesaler's contracts with and the credit quality of each participating municipality are important. In a wholesale system, treatment facilities are often more sophisticated than those of smaller, individual systems; the major construction and operating risks are borne by the wholesale utility. Purchased water costs may be passed through directly to the participants, eliminating the need for complex rate-setting procedures and, accordingly, allowing for greater predictability of financial results.

A pure retail system depends more on one or a limited number of individual communities and has conveyance as well as treatment responsibility, with the added operating and maintenance (O&M) expense of distribution facilities. As local entities, retail systems may be more politically sensitive to the rate-setting process.

A wholesale/retail system complements a municipality's own facilities and may or may not have conveyance responsibility.

Regulations

Some utilities have invested millions, and sometimes billions, of dollars to upgrade plants to comply with the CWA and SDWA. A brief description of provisions of the acts that drive costly compliance program requirements and ways they are enforced follows.

The Federal Water Pollution Control Act as amended by the CWA (1977) and SDWA (1987) requires full secondary treatment of wastewater discharged by wastewater treatment plants. The CWA limits discharge of pollutants by wastewater treatment or industrial pretreatment plants into the nation's waters through the National Pollutant Elimination Discharge System (NPDES) permitting process. Discharges related to combined or sanitary sewer overflows are also regulated through the permit system. Fines or penalties are assessed for noncompliance with pollutant limits.

Under the SDWA, the U.S. Environmental Protection Agency (EPA) promulgated nationwide drinking water regulations that specify the level of harmful contaminants allowed in drinking water. The 1986 amendments to the act required the EPA to issue a rule requiring public systems

Requested Information

Service Area

- Largest employers.
- Assessed value and building permit history.

Revenue/Rates

- Customers, revenues, and sales by class.
- Largest customers, contribution to revenue, and sales volume.
- Rate study.

System

- Demand and capacity.
- Engineering report/feasibility study.

Financial

- Audited financial statements.
- Interim financial reports.
- Current and proposed budget.
- Capital improvement plan.
- Debt service coverage ratios.

supplied by unfiltered water to meet a series of water quality, operational, and watershed control criteria. Utilities that do not meet these criteria have to upgrade their water treatment plants to provide for water filtration. Among other provisions, the 1996 amendments to the SDWA direct the EPA to issue regulations requiring disinfection as necessary for groundwater-based drinking water systems by 2002.

The EPA delegates primary enforcement of the CWA and the SDWA to state agencies if state regulations are at least as stringent as federal regulations.

Management

Fitch derives information to assess a management's effectiveness from meetings with senior management and board members, site visits, and a review of long- and short-term strategic plans. A planning process focused on compliance with regulations and a physical plant maintenance program that results in good operating performance and minimizes capital investment are indicators of good management. Others are a strong commitment to customer service, effective use of federal and state financial subsidies, and good communication with agents representing federal and state environmental organizations. Additional evidence of good management is provided as each rating factor is analyzed.

Rates

Ability to Pay

The service area's economy and demographics are analyzed as indicators of ability to pay for utility services. Fitch reviews population, income, and property valuation data, focusing on trends as well as national, regional, and state comparisons. Economic strength and depth are assessed by reviewing data on employment composition by industry sector, employment growth, and unemployment.

Rate-Setting Process

Characteristics contributing to credit strength are: an independent rate-setting authority; expense allocation by customer class that reflects cost of service; implementation of steady, moderate rate increases as needed; and legal requirements that provide for a rate stabilization fund.

Rate Comparison

Fitch reviews rates on a combined and stand-alone basis, comparing them to regional rates and those charged by similar-sized utilities. Rates that promote conservation (metered versus flat; increasing block versus declining block, and seasonal versus uniform) are viewed favorably. Higher than average rates may reflect nondiscretionary investments associated with environmental regulations. Affordability and lack of ratepayer acceptance are indicators of credit risk associated with high rates.

Ballot Measures

State or local government measures placed on the ballot during regular or special elections that would limit increases in user fees are a credit risk. Rating action may be deferred, pending results of voter support for the measure. If voters support the measure and it becomes effective, Fitch considers its financial impact and the likely success of any legal challenges that would exempt the utility from compliance with the measure's requirements.

Infrastructure

Water Supply

The source and adequacy of the water supply determine the cost of raw water and the utility's ability to meet current and projected demand. Elements considered include: the source's location (if imported, the terms of the water rights and allocation contracts); the cost of enforcing water quality protection measures; cost of conservation measures and the resultant impact on revenues and consumer acceptance of water reclamation and effluent re-use.

Groundwater sources generally are relatively pure and usually do not require filtration made necessary by pollu-

tion. Aquifer levels, springflows, recharge, and the effects of pumping on nearby lands determine groundwater adequacy. Advanced treatment of surface water sources is increasingly required of sources located in highly developed watersheds. Supply adequacy is determined by safe yield or days supply provided by the source during a period of extended drought.

Plant

An engineering report provided by a well respected firm helps assess the physical plant's condition and identifies current and future capital programs for system improvements, expansion, or compliance with environmental mandates. Qualified engineers employed by the utility can provide data or internal planning documents that also help assess the utility's plant. Data and summary descriptions of system capabilities should include:

- Water
 - Supply, measured by million gallons per day (mgd) — historical and projected demand
 - Treatment plant — capacity adequacy, projected demand, and type of treatment provided.
- Wastewater
 - Type of treatment — primary, secondary, or tertiary.
 - Infiltration and inflow (groundwater and stormwater seepage into sewer mains).
 - Residuals handling (sludge treatment).
 - Average daily and peak daily flows (dry and wet weather).
- Water/Wastewater
 - Age and condition of pumps, mains, trunk, and distribution pipes.

Financial Performance

While debt service coverage and the utility's overall debt burden are key indicators of fiscal health, Fitch's assessment of financial performance is comprehensive. It includes a review of a five- to 10-year operating summary that focuses on compound annual revenue growth relative to operating expenses, as well as revenue by customer class, customer growth patterns, and revenue concentration. Long- and short-term financial projections based on the utility's capital improvement plan are assessed based on similar criteria.

Parameters for any single ratio or group of ratios are not absolute, as Fitch recognizes each utility is unique. Differences in the configuration of each water and/or wastewater utility make financial ratio correlations somewhat complex. Guidelines differ for an individual water or wastewater utility and a combined utility system, as well as for retail and wholesale systems. While some absolute

comparisons are valid, historical and projected trends are more important for spotting changes in financial strength.

Debt service coverage is a measure of protection against risk of nonpayment due to emergency (event risk), short-term disturbances (cyclical risk), and long-term declines (secular risk). While senior lien debt, under some circumstances, may be rated higher than junior lien debt, adequate coverage for all obligations is important; thus, combined debt service coverage is a key ratio. Other ratios calculated to facilitate the financial analysis are summarized in the box below.

Ratio Descriptions

Net Revenues Available for Debt Service: Gross revenues plus non-operating income less operating and maintenance expenses.

Operating and Maintenance Expenses: Operating and maintenance expenses less depreciation, amortization, and interest expenses.

Net Fixed Assets: Fixed assets less accumulated depreciation.

Net Working Capital: Current assets less current liabilities excluding restricted funds.

Operating Ratio: Operating and maintenance expenses divided by total operating revenues.

Net Takedown: Net available divided by gross revenue plus non-operating income.

Debt Service Coverage Ratio: Net available divided by principal and interest requirements.

Debt Service Safety Margin: Net available less annual principal and interest requirement divided by gross revenue plus non-operating income.

Current Ratio: Total current assets divided by total current liabilities excluding restricted funds.

Debt Ratio: Gross long-term debt plus the current portion of long-term debt less debt service reserve funds divided by net fixed assets plus net working capital.

Some utilities structure rates such that an expected amount of funds will be available for transfer to support general governmental operations (open loop). Such required contributions are made after debt service payments and are often the last item in the flow of funds. Therefore they are included in the net available for debt service resulting in an apparent excess of funds for coverage

However, because rates are set in anticipation of such support for general operations, the resulting inflated coverage must be discounted. Combined retail systems often have higher coverage than wholesale systems, leaving a margin not only for general fund transfers but also for the unexpected expenses of a more complex system.

Capital Improvement Plan

The capital improvement plan (CIP) identifies the expected cost and schedule for the construction and funding of major projects. The plan drives rate strategy and financial assumptions, providing the foundation for projections of future debt service capability. The CIP's cost and its impact on the utility's overall financial condition and rate structure must be ascertained, including the proposed method of financing, additional debt service, and increased O&M expense.

The discretionary or nondiscretionary nature of CIP projects affects financial flexibility, since a utility can postpone or defer elective projects. While projects mandated by federal, state, and/or regional authorities are relatively rigid, with targeted milestones and penalties set for non-compliance, in some cases regulators agree to adjust schedules and financial penalties to meet extenuating circumstances.

A well conceived long-term comprehensive capital strategy should focus on funding projects that maintain the integrity of the existing infrastructure, prevent constraints by providing for needed extensions and additions to capacity, and comply with regulatory mandates without straining a utility's financial integrity.

Legal Provisions

Revenue Pledge

Whether the pledge is one of gross or net revenues, Fitch evaluates the system based on a net revenue analysis. This reflects the need for the utility to be operational to provide service and generate adequate revenues to cover debt service. Pledged revenues may include water sales, wastewater service charges, special assessments, system development charges (or connection fees), interest income and any additional revenues, income, receipts, or other resources authorized in the resolution, including stabilization fund deposits and withdrawals.

Fitch evaluates the financial impact of variable and/or temporary revenue sources, such as system development charges and withdrawals from rate stabilization funds in its rating analysis. Since connection fees fluctuate with new customer growth in the service area, their contribution to pledged revenues can be uneven. Accordingly, Fitch reviews the degree to which the use of such fees is matched either to capital construction or to earnings flow

Deposits into rate stabilization funds depend on earnings in excess of current requirements and commonly are accumulated in anticipation of the start of a large capital program. Withdrawals from the stabilization fund are made as deemed necessary by a utility's management to minimize rate shock as the capital program is implemented. The rate stabilization fund will be depleted as the capital program nears completion, at which time rate revenues should be sufficient to provide the covenanted debt service coverage. A stabilization fund also may exist to smooth revenues during periods of unusual weather.

Rate Covenant

Rates and charges should be set so that net revenues equal at least 115% of annual debt service requirements on senior lien obligations and amounts required to be deposited in any reserve or contingency fund created for senior lien obligations. Additionally, net revenues, together with other lawfully available funds, shall be sufficient to pay principal and interest on any junior lien, subordinate lien, and inferior lien obligations, as well as to fund any transfers to the municipality's operating funds as permitted by the ordinance.

Reserve Funds

The utility should maintain a debt service reserve account equal to, at minimum, the least of maximum annual debt service, 125% of average annual debt service, or 10% of bond proceeds. Ideally, the reserve will be funded at the time of bond issuance but, depending on circumstances, may be accumulated over a period of not more than 60 months. Reserve account requirements may be satisfied by a surety bond or other credit facility acceptable to Fitch.

O&M and repair and replacement reserves are viewed favorably. The suggested set-aside for O&M reserves is two

to three months of the prior year's O&M expense. Repair and replacement reserve amounts generally are determined by management and predicated on the system's age and condition.

Additional Bonds Covenant

Fitch prefers an additional bonds covenant for net revenues to equal at least 1.15 times (x)-1.25x pro forma maximum annual debt service. While a historical coverage test is preferred, sole reliance on such a test may require that the utility raise rates in advance of undertaking capital projects. Accordingly, there are some circumstances in which it may be too restrictive. It may be acceptable for utilities with large capital programs, for example, to utilize a projected coverage test that factors in prospective rate adjustments, such as planned increases and rate stabilization strategies.

More liberal indentures allow for adjustment of test period net revenues for acquisitions and construction of facilities that are expected to be funded by bond proceeds and to add to revenues, contractual arrangements, and assessments. While all additional bonds covenants will be evaluated on a case-by-case basis, special attention is given to the assumptions behind a forecast test. For example, a distinction is made between enacted rate increases with future effective dates versus projected rate adjustments not yet enacted as the latter is subject to the rate-setting process. Fitch prefers that inclusion of expected revenue additions be discounted somewhat to allow for forecast uncertainties. Alternative types of debt (including junior liens and state revolving fund loans) should be included in the additional bonds covenant. Fitch prefers that variable rate and other short-term debt be limited to 15%-20% of total outstanding debt.

GUIDES TO MANAGING URBAN CAPITAL, vol. 5

Harry P. Hatry and George E. Peterson, Series Editors

GUIDE TO SETTING PRIORITIES FOR CAPITAL INVESTMENT

Harry P. Hatry
Annie P. Millar
James H. Evans

*A study prepared by The Urban Institute
in collaboration with Public Technology, Inc*

“Guide to Setting Priorities for Capital Investment” by P. Harry Hatry, Annie P. Millar and George E. Peterson. In Guides to Managing Urban Capital, Volume 5. Harry P. Hatry and George E. Peterson, Series Editors. A study prepared by The Urban Institute in collaboration with Public Technology, Inc. Washington, D.C. The Urban Institute Press



THE URBAN INSTITUTE PRESS WASHINGTON, DC

161

INTRODUCTION

Local governments typically have many claimants for highly limited capital funds. And without convincing evidence that projects are needed, public officials will find it necessary to select projects primarily by using seat-of-the-pants methods and responding to pressures from vocal citizens groups as well as operating agencies.

"At this stage, there is no objective way for a body with city-wide perspective to rank projects relative to one another in order of importance. What is needed is an evaluation framework by which subjectivity is limited and channeled, a framework which incorporates priority designation of projects."¹

The term *facility maintenance* as used in this report includes any action proposed to keep facilities up to working condition, including replacement and rehabilitation.

This report examines procedures for selecting among facility maintenance projects across services—to determine which project proposals would best serve the community as a whole.

Local officials also need to consider whether adequate recurring maintenance, such as preventive maintenance, is being provided so that they can minimize future demands for rehabilitation and replacement of facilities. Therefore, although this report focuses on setting priorities among capital improvement proposals, it is also concerned with the question of how to balance capital improvements funded from the capital budget and facility maintenance expenses funded from the operating budget.

This survey focused on cities of 125,000 population or more to maximize the likelihood that the sample would include cities with a systematic, formal, central priority-setting process.

TECHNICAL ISSUES

Ideally these conditions would prevail in local governments:

- All capital project proposals, regardless of the type of project, would be rated on the same comprehensive set of evaluation criteria.
- Complete, valid information would be provided on each criterion for each project.
- The information on the diverse criteria could be readily combined to provide a clear picture of each project's value and a clear order of the priority among them.

Unfortunately, these conditions do not exist in the real world.

All local governments face these key technical problems:

- There are inherent difficulties in comparing diverse projects that ultimately compete for the same limited funds.
- The scope and quality of the information generated by operating (or central staff) agencies on individual projects are likely to be very

Basic Steps in the Capital Proposal Technical Review Process

The following steps represent a composite of the basic process for setting priorities we found in those agencies with formal capital proposal review processes:

1. A central office issues forms and instructions to guide operating agencies on their capital budget submissions. At about this same time, general budget guidelines based on the city's financial condition are sent out.

The central office may provide rough budget target figures for each program area to the operating agencies.

2. For each capital project proposed, the operating agency provides information in writing on specified criteria.

3. A central office examines each proposal to determine if the required information has been provided and if the quality of information seems to be adequate.

evaluation criteria the "quality of the data submitted."

4. A central review group (or groups) assesses each proposal on a set of standard rating and ranking procedures using the information on individual criteria to help generate an overall rating or ranking for each proposed project.

5. Public officials responsible for the final budget decisions subsequently use the ratings and rankings, along with other information, to select proposals for inclusion in the capital budget.

Most local governments deviate from this process in many ways. Most written justifications we found to be highly general,

information to justify projects is provided informally,

not have formal evaluation criteria or central rating or ranking procedures.

Evaluation Criteria Against Which Capital Proposals Should Be Assessed

Project proposals need to be rated and ranked in some manner—even if only highly subjectively. Preferably, each proposal would be rated against an explicit set of evaluation criteria, recognizing, however, that some political factors may not be included in the set. Local officials should then be able to rank and select capital projects based on this information.

The criteria were chosen to (a) cover the major areas of concern that we found in the local governments, (b) minimize overlaps and duplication, and (c) exclude what appear to be secondary issues.

BEST AVAILABLE COPY

1627

1. Fiscal impacts (on costs and revenues)
2. Health and safety effects
3. Community economic effects
4. Environmental, aesthetic, and social effects
5. Amount of disruption and inconvenience caused by the project
6. Distributional effects—who is affected and how
7. Feasibility, including public support and project readiness
8. Implications of deferring the project
9. Amount of uncertainty and risk
10. Effects on interjurisdictional relationships
11. Advantages accruing from relationship to other capital proposals

1. Fiscal Impacts (*on Costs and Revenues*)

All local governments, of course, require data on what each proposed capital project is expected to cost during the capital budget year.

information on the operating and maintenance (O&M) costs of the proposed project; estimates of the change in O&M costs due to the project.

The practice of explicitly considering both initial and subsequent operating, maintenance, and rehabilitation costs for a facility is sometimes referred to as *life-cycle costing*.

2. Health and Safety Effects

Data on both the estimated number of persons likely to be affected and the severity of the effect should be provided, probably by the operating agency or an environmental protection unit. The data should indicate the expected change in the number and severity of such events if the proposed project is implemented.

3. Community Economic Effects

Operating agencies, such as public works departments, probably are not in a good position to provide such information. The local agency responsible for economic development probably should provide information on the economic effects of proposals, which would also ensure uniform analysis across proposals.

For each capital proposal with likely significant economic effects, agencies should generate information as to effects on the following:

- Property values
- The future tax base
- Added jobs¹
- Income to citizens
- Changes in business income (e.g., improving the economic base through the retention and attraction of business)
- Stabilization or revitalization of declining neighborhoods.

4. Environmental, Aesthetic, and Social Effects

This criterion is a catchall for other significant quality-of-service (quality-of-life) related impacts likely as a result of the project. Both beneficial and adverse impacts should be considered.

Noise and air and water pollution, even if they do not cause significant health problems, may have adverse environmental, aesthetic, or social effects.

Some of the information for evaluating this criterion will come from the operating agency submitting the capital proposal, but some information, such as environmental and aesthetic effects, may have to come from other agencies or special central review groups (such as a citizen community aesthetics review panel).

5. Amount of Disruption or Inconvenience Caused by the Project

Operating agencies should provide estimates of the duration and severity of such disruptions and the number of persons likely to be affected.

This criterion is probably of primary use in encouraging government personnel to work out means to reduce the disruption, such as by carefully scheduling the work or using baffling to reduce noise—rather than in excluding otherwise worthy projects.

6. Distributional Effects

Capital projects vary with respect to the number of citizens they affect, and projects inevitably affect various citizen groups differently. Few of the local governments we examined specifically asked how many persons are likely to be affected or in what way.

Some priority-setting procedures include criteria related to helping low- and moderate-income areas.

The ratings on each criterion for every proposed project were subsequently multiplied by these geographical weights for an overall score.

Special Needs—the extent to which the project addresses the special needs of the elderly, handicapped, or low-income citizens.

Project Readiness

Projects should be assessed with respect to factors such as these:

- The degree of public support for and against the project
- The extent of any special interest group opposition
- Special implementation problems that would need to be overcome (such as obtaining federal or state approval)
- The project's compatibility and compliance with comprehensive plans
- Whether the project is a continuation project which, if dropped, will suggest that the earlier expenditures have been wasted and cause embarrassment
- Any legal issues likely to arise.

Another important aspect of implementation feasibility is the agency's ability, given its resources, to undertake the necessary tasks (including administering any contracts) by the time specified.

8. Implications of Deferring the Project—on Each Previous Criterion

The question "What are the implications of deferring the project for one year?" seems quite important. What will be the added costs? What and who will suffer and how? Is some of the planned funding for the project, such as a federal grant, more or less likely to be available the next year? To some extent, this question overlaps with previous evaluation criteria, but it will sharpen attention on the best timing for individual projects.

9. Amount of Uncertainty and Risk

These uncertainties can, for example, be in cost estimates (particularly in projects requiring new and unusual elements) or in effects on service quality, perhaps because of uncertainties about the durability and reliability of new materials, new technology, and new procedures

10. Effects on Interjurisdictional Relationships

A special issue is whether a proposed project has any significant adverse or beneficial effect on relations with other jurisdictions or quasi-governmental agencies that serve the same area. If so, the project is likely to require some special coordinating activity that could affect the project's attractiveness. A common example is the use of a landfill in one jurisdiction to dispose of waste from other jurisdictions.

11. Advantages Accruing From Relationship to Other Capital Proposals

If undertaking one project will affect the costs or effects of another project, the relationship should be identified because it can affect the relative attractiveness of one or both of the projects.

Aside from noting the importance of such coordination as an evaluation criterion, we note that more emphasis on coordinating projects in different agencies to permit timely joint efforts could be a major source of cost savings.³

Specific Services

Most of the criteria cited above such as financial and health and safety criteria, and feasibility—can be measured in the same units for different service areas.

- Ideally, comparative information from other jurisdictions—benchmark data—would be provided to give local public officials another

Can Valid Information Be Obtained on the Evaluation Criteria?

Where such data are not being collected—probably most jurisdictions—officials will need to start with cruder and more judgmental estimates for the various criteria. Nevertheless, we suggest that local officials use criteria such as these, seeking specific information on each criterion even though the information is highly judgmental. At least this effort will focus attention on the issues of prime importance. Then the local government should try, if only gradually, to improve its information base and its ability to estimate the effects of proposed projects.

Central analysis offices, such as management and budget, evaluation, and planning offices, could

play important parts in helping to develop the data collection and analysis procedures. For some criteria, such as those on economic and environmental effects, the information probably will not come from the line agency submitting the proposal but from a special unit such as the government's economic development, planning, or environmental agencies.⁶

A major concern for the central priority-setting process is comparability of the information provided for projects from different agencies. Unfortunately, different agencies inevitably will provide information of differing levels of quality. This problem perhaps is best handled by considering quality of information as part of the criterion on uncertainty and risk (criterion 9). For example, if the information on a proposal is too uncertain and the consequences of deferring it are not large, a jurisdiction might defer the project until better information on it can be made available.

Not all the criteria will be important for every proposal. For instance, safety is likely to be a vital criterion for some bridge and road rehabilitation proposals but not for other bridge or road repair requests. In the latter case, the agency needs to spend little, if any, time on that particular criterion.

Translating Information on Project Proposals into Ratings and Rankings

Ratings and Rankings

Rankings provide an ordering of projects relative to one another without assigning any absolute value to any of the projects.

Ratings, on the other hand, indicate the absolute value or merit of each proposal on the criteria and thus can also aid decisions as to what the cut-off level (for including proposals in the budget) should be. The difference in ratings among proposed projects indicates the magnitude of the differences in their values.

It is rather common for operating agencies to rate, and especially to rank, the projects they are proposing for funding in the CIP or capital budget.

Rankings and ratings by operating agencies indicate their priorities and are, therefore, likely to be important to central reviewers and public officials. Some jurisdictions include the operating agencies' ranking as one of their evaluation criteria.

Public officials should be aware of the basis for the ratings or rankings, however, and not merely given such priorities without explanation. Operating agencies should make clear the evaluation criteria they have used and provide the backup information on each relevant criterion.

Thus, even if operating agencies provide ratings and rankings, they should make backup information on their evaluation criteria available to central decision makers; the decision makers should have the option to base their choices on the backup information rather than on the agency rating or ranking.

Need to Better Define Rating Categories

Without clear criteria and well-defined rating categories, assessments will be highly subjective. Subjectivity can seriously affect the reliability of the ratings and thus their usefulness.

We recommend that governments develop "anchored" scales, in which each score is clearly tied to a specific definition, for as many criteria as possible.

How Should Information on Individual Criteria Be Aggregated to Make Across-Project Comparisons (Scoring Individual Projects)?

Ideally, each proposal would be given an overall score based on its performance on all the evaluation criteria. These scores should provide a fair comparison among all projects regardless of the submitting agency or the service area. Overall scores, to the extent they are considered valid by public officials, can greatly simplify the job of project selection.

We found no fully satisfactory system for scoring, and it is possible that a fully satisfactory one may not be achievable. Nevertheless, many local governments have considerable interest in them because they simplify a very complex problem, and even crude attempts at overall scoring may be helpful. *Because of the considerable limitations of such procedures, we recommend that the basic information on the individual evaluation criteria be provided to public officials, along with the aggregate scores, so they have more complete information on which to base their own judgments.*

Aggregate scores simplify priority setting. However, they mask important issues, especially if there are problems with the weights. Weights should reflect the government's values as to the relative importance of each evaluation criteria and of each response category for each of the criteria. These weights should be reviewed regularly, probably annually or every other year.

No set of weights that applies to all jurisdictions can be developed. The collection of data for the criteria is basically a technical task, but the selection of weights is based on value judgments, best left to each local jurisdiction. In fact, value judgments on the relative importance of individual criteria are likely to change over time and to differ among individuals. We suggest that local governments that use weighting systems ensure that the weights and the basis for them are known by those using the resulting ratings. In any case, individual elected or appointed officials may want to exercise their own judgment and not necessarily be bound by the aggregate ratings. The overall scores are, after all, meant to provide officials with information to help them make their choices, not to make the choices for them.

EXHIBIT 5 DAYTON: CAPITAL PROJECT RATING FORM

MEMBER'S NAME _____

PROJECT NAME _____ NO. _____

		SCORE RANGE	RATER'S SCORE
A. Impact on Dayton's goal of increasing neighborhood vitality	___ Major impact	8-10	_____
	___ Moderate impact	4-7	
	___ Minor impact	1-3	
	___ No impact	0	
B. Impact on Dayton's goal of increasing economic vitality	___ Major impact	8-10	_____
	___ Moderate impact	4-7	
	___ Minor impact	1-3	
	___ No impact	0	
C. Impact on Dayton's goal of urban conservation	___ Major impact	8-10	_____
	___ Moderate impact	4-7	
	___ Minor impact	1-3	
	___ No impact	0	
D. Conformance with plans	___ Major element	8-10	_____
	___ Moderate element	4-7	
	___ Minor element	1-3	
	___ No element	0	
E. Priority board ranking	___ First priority	10	_____
	___ Second priority	8	
	___ Third priority	6	
	___ Fourth priority	4	
	___ Fifth priority	2	
F. Departmental priority classification	___ Critical	9-10	_____
	___ Valuable	7-8	
	___ Beneficial	5-6	
	___ Desirable	1-4	
	___ Questionable	0	

EXHIBIT 5 DAYTON: CAPITAL PROJECT RATING FORM—*continued*

G. This project directly supports existing development efforts	<input type="checkbox"/> In the Inner Ring <input type="checkbox"/> Outside the Inner Ring <input type="checkbox"/> Does not support development efforts	6-10 1-8 0	_____
H. Impact on expenditures	<input type="checkbox"/> Major decrease <input type="checkbox"/> Minor decrease <input type="checkbox"/> Remains the same <input type="checkbox"/> Increases	6-10 1-5 0 -1/-5	_____
I. Impact on energy consumption	<input type="checkbox"/> Major reduction <input type="checkbox"/> Moderate/minor reduction <input type="checkbox"/> No impact on energy consumption <input type="checkbox"/> Increases energy consumption	6-10 1-5 0 -1/-5	_____
J. This project is specifically included in an approved replacement/maintenance schedule	<input type="checkbox"/> Yes <input type="checkbox"/> No	6-10 0	_____
K. Impact on economic/redevelopment plan	<input type="checkbox"/> Major impact <input type="checkbox"/> Moderate impact <input type="checkbox"/> Minor impact <input type="checkbox"/> No impact	8-10 4-7 1-3 0	_____
L. Project duplicates other available public or private facility	<input type="checkbox"/> Yes <input type="checkbox"/> No	0 -1/-5	_____
M. Rater's general appraisal	<input type="checkbox"/> 0-10		_____
			TOTAL SCORE _____

PROJECT NOTES

BEST AVAILABLE COPY

167

22 / GUIDE TO SETTING PRIORITIES FOR CAPITAL INVESTMENT

The Need To Consider the Aggregate Impact of All Projects

The focus of the discussion thus far has been on evaluating individual projects. Local governments should also consider the aggregate impact of all projects to be included in the capital budget. The total cost of any package of projects will, of course, need to be calculated to determine whether it matches expected revenues. In addition, a government would be well advised to examine the combined effects on each of the evaluation criteria to determine whether the

overall net effect is satisfactory or not. For example, disruptions or environmental impacts, tolerable on any single project, might not be acceptable when the projects are considered together. In addition, certain inequities become evident only when projects are looked at collectively; for instance, parts of the community may be found to be unduly disrupted by capital projects and others unduly favored. A transportation official should check to make sure that major work is not done on a bridge at the same time as work is done on the streets that are the best alternative to the bridge.

EXHIBIT 6 DENVER: CAPITAL IMPROVEMENT PROJECT RATING FORM

BUDGET YEAR

Requesting Agency:			
Project Title:			
	ITEM SCORE	WEIGHT	TOTAL
1. NEED (OTHER THAN 2-4) 2 Serious, immediate identified need 1 Moderate identified need 0 Low or unidentified need		7.5	
2. PUBLIC HEALTH OR SAFETY 2 Addresses a major health or safety hazard 1 Addresses a minor health or safety hazard 0 All other projects		6	
3. LEGALLY REQUIRED 2 Required to meet legal regulations 1 Will meet anticipated legal requirements 0 All other projects		3.5	
4. COMPLETES A PROJECT 2 Required to make useable a major public improvement 1 Needed to complete an already useable public improvement 0 All other projects		3.5	
5. ADDRESSES NEED 2 Project highly effective and efficient 1 Project moderately effective and efficient 0 Project low effectiveness and efficiency		5	
6. RELATIONSHIP TO PLANS/POLICIES 2 Clearly advances plans and policies 1 Doesn't conflict with plans and policies 0 Conflicts with plans and policies		5.5	
7. NEIGHBORHOOD IMPACT 2 Overall positive effects 1 Little or no effect 0 Overall negative effects		5	

8. GENERAL BUDGET IMPACT			
2	Returns investment or more than investment		
1.5	Reduces or avoids subsequent costs		
1.0	Little or no net impact on subsequent costs (< \$10,000 per yr.)	7.5	
.5	Moderate net impact (< \$50,000 per yr.)		
0	High net impact (> \$50,000 per yr.)		
9. MOTOR VEHICLE UTILIZATION			
2	Results in economies of City's motor vehicle use		
1	No impact	1	
0	Increases costs of City's motor vehicle use		
10. DEPENDENCE ON PETROLEUM-BASED PRODUCTS (OTHER THAN 9)			
2	Reduces dependence		
1	No impact on dependence	2.5	
0	Increases dependence		
11. QUALITY OF INFORMATION			
2	Complete and accurate		
1	Incomplete	3	
0	Very little, poor		
TOTAL SCORE			
RANK (within Department)			

The Handling of Capital Proposals Involving Different Funding Sources

We suggest that enterprise fund proposals be subjected to a proposal review process similar to the process that other projects are subjected to, and that the lower-rated projects be reviewed along with other projects not in the fund. While projects using enterprise funds do not require additional revenues from the general fund, most of the money does come from the same citizens as do general funds. In a sense, therefore, they compete for the citizens' ability to pay. Enterprise fund projects should therefore, compete to some extent with regular projects.

In competing with 100 percent locally funded projects, the partially locally funded projects are often ranked higher because they entail lower initial costs by the local jurisdiction. Rarely are future operating and maintenance cost implications considered in these decisions (in only three of the twenty-five cities in our survey). This deficiency can be critical if future O&M costs (which usually will come from local sources) are significant.

We recommend that projects funded from outside sources but requiring a local match compete with other projects for the local funds. Even projects funded 100 percent by outside sources should at least be reviewed to determine their future cost implications.

Determination of the Total Size of the Capital Budget

Anticipated revenue levels, not need, appear to be most influential in determining the size of capital budgets. Anticipated revenues certainly are an important consideration, but they should not be the only one.

Shortcuts

The following shortcuts can ease the burden of getting the proper information:

1. *Conduct a preliminary screening* (such as is done in Dayton and Milwaukee) in which some projects may be rejected outright. Rejection may occur because the data are inaccurate or unrealistic, the operating department is found to be unprepared to undertake the requested project, or a proposal is undesirable.
2. *Request reduced information for relatively inexpensive projects*, as Norfolk does for relatively inexpensive equipment proposals.
3. *Focus the review activity on the most important projects.*
4. *Focus on projects near the "cutoff" point*, that is, projects whose inclusion in the capital budget is problematic.
5. *Focus on the evaluation criteria that are most relevant and significant to the individual proposals.*
6. *Summarize and highlight key issues on the set of proposals.*

We suggest that local jurisdictions consider each of these techniques for simplifying the priority-setting process.

BEST AVAILABLE COPY

EXHIBIT 9 LIST OF DESIRABLE "TECHNICAL" CHARACTERISTICS FOR A PRIORITY-SETTING PROCESS

1. Be understandable. The information provided should be clear both to participants and to users of the process. For example, unclear evaluation criteria or esoteric scoring procedures are less likely to be helpful.
2. Be comprehensive, that is, consider all major consequences of a project.
3. Minimize double-counting of evaluative criteria. (If two criteria are highly interrelated and the selection process does not take this fact into consideration, double-counting can result.)
4. Provide valid, accurate information. When numerical information is provided it should be accurate and meaningful. When qualitative information is used it should be clearly presented and accompanied by an appropriate rationale so that users will know what has been evaluated.
5. Articulate clearly the key value judgments in the procedures made by nonelected officials (e.g., if weights are developed by persons other than the elected officials).
6. Provide information not only on the relative ranking of projects but also on the individual merits or value of the projects. Without the latter information, project selectors will not know which projects are worth funding. (If a set of projects are not worthwhile, the fact that one is top-ranked does not make them worthy of funding. Similarly, even low-ranked projects may be worth funding if they have a high payoff.)
7. Be insensitive to minor differences in ratings. Procedures, for example, that automatically reject a proposal because of small differences in ratings among raters, would be a problem.
8. Accept proposals that meet a critical need while rejecting proposals that fail to satisfy any critical requirement. Ratings should be so designed as to spotlight projects that are urgent or critical. Norfolk, Virginia, for example, includes as a criterion, an "overriding consideration factor" to cover any major and far-reaching consideration not otherwise covered adequately. Either positive or negative points of up to 20 may be assigned; this factor must be documented.
9. Consider possible interdependencies among projects. Some projects may benefit each other, thus increasing their joint value or reducing their total cost; examples are street and water projects that could save money if done jointly. In other cases, some projects may together add problems; an example is scheduling a bridge for major rehabilitation at the same time a major sewer project is planned under the street that is the major alternative route to the bridge.
10. Be practical in terms of cost, time, and personnel available. Late or overly expensive information would, of course, be a major problem for any priority-setting system.

NOTE: In developing this list, the study team found quite useful Theodore Wang and William Beine's Project Report to the National Bureau of Standards, "The Development of Criteria for Project Prioritization," Washington, D.C., February 8, 1978

ORGANIZATIONAL ISSUES

Decisions on capital projects are usually made separately from the operating budget process (although this seems to be changing gradually). Such an organizational splintering of the operating and capital budget implies that the trade-offs between capital and operating and maintenance costs are not always scrutinized.

In general, the major participants in determining the capital budget are the:

- Operating departments
- Central staff units
- General citizenry
- Elected and appointed officials

Role of Operating Departments in the Central Priority-Setting Process

In most local governments, operating departments initiate the selection of capital requests.

provide most of the basic data

We suggest that local officials ask each operating department to at least rank, or assign to a rating category, each of its project proposals.

Whether operating departments assign priorities to each capital proposal or not, they should generate appropriate data about each proposal to enable meaningful across-agency review and selection.

Role of Central Units

community development or planning department either takes the lead in coordinating the priority-setting process or provides technical assistance and information

Budget offices generally play an important role in the selection of capital proposals.

Sometimes (e.g., Riverside, California), the finance department will estimate funding limits for each operating department before the departments make proposal submissions for central review.

In jurisdictions with *city or county managers*, sometimes the manager or assistant manager provides the only central review

We make the following suggestions for establishing effective central staff participation in the priority-setting process:

1. Central reviewers should include persons representing a variety of government perspectives.

This practice will provide a variety of perspectives, yielding a better, more comprehensive understanding of proposals. It will also encourage better coordination of actions that result from the selection process.

And central offices should be consistent in returning to the originating departments—for further justification or alterations—proposals that do not meet these requirements.

3. Central offices should not overspecify funding constraints in advance so as to preclude operating agencies from indicating all the needs agency officials feel are important.

Role of Citizens

Although it can be argued that our representative democracy already provides citizen representation through elected officials (and administrators appointed by them), most localities incorporate one or more additional forms of citizen input into the capital budgeting process.

Role of Elected Officials

It can range from a pro forma review to full-scale participation in priority setting.

Elected (and central administrative) officials should, however, encourage, if not require, that proposal submissions provide specific information indicating the potential impacts of the project on the community and its citizens.

Political Considerations

An important issue is how political considerations should affect the priority-setting process.

There appear to be four major deviations:

1. In practice, particularly in large cities and counties, many major priority decisions are made by department heads who (understandably) do consider political factors, such as council member preferences or interest group pressures.
2. Elected officials are often likely to want to camouflage the political nature of certain choices by making their wishes known informally to technical staff, thereby making capital project choices appear "professional" rather than "political."
3. From a purely practical standpoint it is often infeasible for elected officials, often part-time, to examine intensively many capital projects. Inevitably, therefore, many significant capital choices will continue to be made at the operating department level.
4. Some elected officials appear to prefer to leave many of the choices to the technical staff as a matter of personal style or as a way of avoiding excessive political heat.

We suggest the following regarding political aspects of the priority-setting process:

1. The technical evaluation criteria should include some criteria that have political implications, such as the number and category of persons affected (e.g., helped) by individual projects. (It can be argued that any criteria that address citizen impacts, such as safety hazards, road rideability, or sewer backups, have political implications.) Thus, elected officials should seek to obtain reasonably sound, objective information on these criteria for each capital project to use as part of their political judgments. The existence of such information on capital proposals should also later help elected officials market their decisions to the public and reduce their own vulnerability to special interest group and media pressures. However, such information will also reduce elected officials' flexibility to include (or exclude) preferred projects, that do not (do) show up well on the technical ratings.
 2. Technical information on proposals should be used not only to select capital proposals but also to help justify capital decisions to the public—for example, by providing hard evidence to a cost-conscious citizenry and media that a capital ex-
- operating costs or avoid large future capital expense. Such marketing efforts can generate citizen support and perhaps even private sector investment.
3. To the extent possible, political considerations, as defined earlier, should be kept separate from the more objective, more technical information (e.g., that on costs and service impacts).
 4. Elected officials should involve community citizen and business leaders in the capital budget review process as a way both to supplement strictly internal proposal review and to muster support for the budget after choices have been made.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

No perfect set of criteria exists, but lack of perfection is no excuse for failing to develop an adequate set.

To encourage the provision of sound information we suggest that (a) a central review office be assigned responsibility for at least sampling the information provided by originating agencies to ascertain that the information is supportable, and (b) relevant agencies affected by a capital proposal be asked to certify that the information is accurate

2. Develop a systematic rating and ranking procedure for capital projects—both within individual functional areas and across functional areas.

A major problem with weighting procedures is that the weights themselves are policy decisions, inevitably based on value judgments

Our suggestion is to develop a relatively simple weighting system and provide officials responsible for setting priorities with backup information on each criteria.

Avoid making the process of selecting capital projects cumbersome by putting too many steps in the review process or by requiring information that cannot be understood or processed conveniently.

Incorporate facility maintenance considerations into capital projects from the very beginning—so that future operating and maintenance costs are explicitly considered and so that total "life cycle" costs are minimized.

BEST AVAILABLE COPY

The Decision Matrix

Those who prepare capital budgets will almost invariably face with the problem that they have to set a priority of interventions that are to a great deal different from one another in nature. In order to solve such a problem, the decision matrix is an excellent instrument. The objective is to create a decision matrix that is in line with the objectives and priorities as set by the community vision and includes all relevant information with regards to possible interventions as evaluation criteria.

It is essentially important that the evaluation criteria of a decision matrix should

- cover the major decision areas and contain the decisive aspects of decision-making.
- minimise the probability of overlaps between the content of valuation criteria. because when one factor is taken into consideration twice or several times, this factor will disproportionately be overemphasised,
- exclude any things that are of secondary importance.

Based on the above, the following evaluation criteria are recommended to include in a decision matrix:

1. Financial impacts: It is of fundamental importance that the financial evaluation of an intervention should not only based on the one-time capital investment/historical purchase price, but should either calculate with either the so called life cycle cost of implementation or as least should take into consideration the impacts of the capital investment on operating, (maintenance) and renewal expenditures.
2. Impact on sectoral policy: It is worthwhile to explore to what extent the intervention will be in harmony with sectoral policies adopted earlier and where it stands in priority set up in relation to its own sector.
3. Economic impact: The impact of intervention on boosting economy should be analyse, that can be measured by looking at the labour market, real estate prices increases, income of citizens/enterprises, etc. for cities, and tax and potential fee revenues or the increase in ability to pay fees for local governments.
4. Environmental impact: When evaluating environment (natural and built), the overall impact (quality of life) should be analysed, thus by using this parameter, a complex analyses should be carried out of impacts on health, natural environment and impacts of aesthetics.

5. Dependability on fulfilment of plans: Security of implementation belongs to this criteria, including whether a thing receives support or is dependant on factors that are not under direct control of the local government, or any other factors that represent a risk that even if there is a positive decision about intervention, the measure of intervention cannot be implemented. Such factor can be an inadequate preparation of a project or incomplete information for decision-making.
6. Impacts of distribution: which can be analysed either on the level of society, i.e. which groups of society are affected positively or adversely, or can mean a local concentration of improved or worsened services or lack of services, which can be important not only because it might be unfair but also in the case when the net impact of several factors may jeopardise the delivery of some services.
7. Impacts of delay: This factor is worth considering because various types of interventions are different in sensibility to the timing of implementation.
8. Linkage to the rest of the interventions: It is important, since an intervention may strengthen or weaken the positive or negative impacts of other interventions. By using this factor, the probability of implementation of measures of intervention belonging to a group of related interventions can be increased. (The use of this factor, however, will not give rise to the necessity of subsequent validation of the results of the decision matrix, see later.)
9. Political price/benefit: It is better to include this factor in the matrix, but since the matrix itself will bring no decision since it is only a preparatory instrument for decision-making, this factor may also be left for use only in the phase of actual decision-making.

Since the decision matrix is not an actual decision made but a preparatory instrument for decision-making, it is of vital importance that its components be documented in details and in a manner that can be understood by everyone. Therefore either the criteria of the study or the above criteria is used for analysing possible interventions, it will always be necessary to

- clearly define the content to each criterion,
- use accurate and standard rating categories, i.e. rating should be done under an “anchored scale”, by unambiguously defining the content of scores that can be given.
- use, in addition to evaluation and rating, adequate background information to consider, so that the decision-maker can rethink whether to accept the evaluation or to change it.

The above actions are indispensable because the decision matrix

- is merely an instrument more “objective” than other methods for evaluating impacts of various interventions.

- will not replace, only prepare political decision-making, therefore decision-makers will have to be aware to what extent they want to alter the scores or components to them.
- cannot curtail the freedom of decision-makers to make decisions, and can only provide better organised and more to-the-point information for decision-making.

As long as the evaluation criteria and rating scales are clearly defined, no problem will be caused in the preparatory phase of decision-making when a specific intervention is rated differently by two sectoral departments, committees or groups. A situation like that is natural and unavoidable in developing city policies, since plans adopted under city policies evolve as a compromise between conflicting real life interests and evaluations. However, it needs a clearly defined, adequately documented and transparent system of preparations for decision-making to allow to have two different rating of the same project by two sectors, which is an absolutely normal situation to happen.

Similarly, decision-makers might evaluate certain factors differently. When adequate background information is available, these preferences can possibly be manifested in sensible impacts. Despite that fact, no chaos will evolve as a result of the decision matrix, because in the phase of the final decision-making it is not matrixes or scores that will compete with one another but votes.

Finally, based on a decision matrix, the importance of each intervention will be expressed by one score. This score, however, is by no means the decision itself but only one step in preparations for decision-making. It is absolutely no good to declare based on the decision matrix exclusively that each intervention that scores over a certain number should be implemented, as the study explains. As early as in the phase of preparation for decision-making, and also later in the process of final decision-making it is by all means necessary to analyse the net impact of projects with the highest score/priority both from a financial and a technical perspective. A final program for environmental or capital investment policy can be created only in such a complex, iterative phase that includes feed-backs.

115

A Possible Decision Matrix

Criteria and their content	Scores and their definitions	Who should do the rating?
<p><u>The perspective of the sector:</u> This criteria will evaluate how important the project is for its own sector.</p>	<p>5 - highest priority in the sector 4 - important element of the program for the sector 3 - an element of the program for the sector 2 - justified/recommended for the sector 1 - acceptable for the sector 0 - not justified for the sector</p>	<p>own sector</p>
<p><u>Environmental impact:</u> This parameter, if meant as an overall environmental impact (quality of life), will analyse the impacts on health and natural environment. (No analysis of impacts of aesthetics on built environment is included due to practical considerations contained in the detailed explanations)</p>	<p>5 - large improvement in environmental quality covering the entire city 4 - large improvement in environmental quality in a small region 3 - improvement in environmental quality that can be experience in a large part of the city 2 - negligible positive impact 1 - no environmental impact 0 - negative environmental impact</p>	<p>department of environment</p>
<p><u>Impacts of city development.</u> This criteria evaluates the impact on the quality of services by the city and the relevance to city development policy.</p>	<p>5 - strategically important with an impact on the entire city 4 - a strategically important element for a special area of actions for development 3 - important element 2 - is in line with the adopted city development policy 1 - neutral 0 - is not in line with the adopted city development policy</p>	<p>chief architect</p>
<p><u>Financial impact</u> This criteria evaluates the financial impact in excess of the one-time capital investment included in the capital budget, i.e impacts of the capital investment project on future operating and maintenance costs.</p>	<p>5 - the project will return within 3 years due to a decrease in operating expenditures 4 - the project will return within 6 years due to a decrease in operating expenditures 3 - the project will return within 10 years due to a decrease in operating expenditures 2 - will decrease operating and renewal costs 1 - no impact on operating and renewal costs 0 - will increase operating and renewal costs</p>	<p>own sector</p>

FE

<p><u>Economic impact</u> This criteria evaluates whether the project will have an impact on boosting the economy in the city or in a part of it.</p>	<p>5 - strong impact of boosting covering the entire city 4 - strong impact of boosting covering a small region (neighbourhood, district) 3 - strong impact of boosting locally 2 - a positive impact that can hardly be experienced 1 - no impact on economy 0 - restrictive element with impacts against boosting economy</p>	<p>Finance department</p>
<p><u>Dependability on fulfilment of plans</u> The security of feasibility, and the ability to quantify and plan the direct and indirect impacts that are to be achieved as explained in the justification to the project in the decision-making process. The extent to which plans can be realised</p>	<p>5 - <u>the impacts to be achieved</u> are quantifiable and can accurately be determined 4 - most of the impacts are quantifiable and can accurately be determined 3 - some of the impacts are quantifiable and can accurately be determined 2 - the project can reliably be implemented, the <u>likelihood</u> of its expected impacts can be determined 1 - the feasibility and impacts of the project are uncertain 0 - the feasibility and impacts of the project are doubtful</p>	<p>own sector</p>
<p><u>Impacts of delay:</u> (sector and city development) This is useful to consider because interventions are not equally sensitive to the timing of implementation</p>	<p>5 - a delay will lead to a critical status 4 - a delay will lead to a substantially worse status in the city 3 - a delay will lead to substantially increased future costs 2 - a delay will lead to increased future costs 1 - no impact 0 - later implementation will be more advantageous</p>	<p>own sector chief architect</p>
<p><u>Possible support by citizens:</u></p>	<p>5 - substantially supported as opinion polls show 4 - somewhat supported as opinion polls show 3 - possibly supported 2 - neutral 1 - there will be opponents to it expectedly 0 - expectedly large number of opponents</p>	<p>policy advisor + PR group</p>