Central and Eastern Europe
Local Government and Housing Privatization

Prepared for the Office of Housing and Urban Programs
Agency for International Development

ICMA
Consortium Report

Consortium Members

International City/County Management Association
Urban Institute
Urban Land Institute
National League of Cities

PN-ABW-007

MUNICIPAL SERVICES SEMINAR:

TECHNICAL SERVICES IN THE MARKET TRANSITION

THE CZECH REPUBLIC AND SLOVAKIA

MARCH 1993

Prepared for the Office of Housing and Urban Programs
U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT

Prepared by

Peggy Norgren

INTERNATIONAL CITY/COUNTY MANAGEMENT ASSOCIATION
USAID Project No. 180-0034
USAID Contract No. EUR-0034-C-00-2034-00
Local Government and Housing Privatization
Request for Services # 13

"TECHNICAL SERVICES IN THE MARKET TRANSITION"
FINAL SEMINAR REPORT AND EVALUATION

TABLE OF CONTENTS

I. Seminar Description 1

II. Participant Evaluation 3

III. Seminar Agenda/Presentations 9

I. SEMINAR DESCRIPTION

Background

Under the Privatization and Development (PAD) contract with Price Waterhouse, A.I.D. sponsored two seminars in the Czech Republic and The Republic of Slovakia to address the topic of privatization of public municipal services. While PAD funds covered seminar speakers and organization, complementary funds from the Housing unit of the Bureau for Private Enterprise covered expenses for participant lodging and per diem. The main objective of the seminars was to provide decision makers at local government levels with guidance on the issues involved in the transfer of public service delivery to the private sector (see agenda attached). While the seminar dealt with a range of municipal services, solid waste management was given special focus as a source of illustration. The seminars took place on August 28-29 in Prague and August 31 - September 1 in Bratislava.

Prague Seminar

More than forty individuals from 39 municipalities attended the two-day seminar delivered at the Dobris Castle, in the outskirts of Prague on August 28 and 29. The introductory speech was delivered by Deputy Mayor of Prague, Mr. Jiri Exner, and was followed by presentations by four American experts (a City of Phoenix official, a retired City of Phoenix official, a solid waste management consultant and a privatization expert) and discussions led by three Czechoslovakian officials from the cities of Ceske Tecin, Banska Bystrica and Karlovy Vary.

The seminar audience was composed of city mayors, deputy mayors, city managers and heads of finance departments (usually responsible for overseeing privatization efforts). Although participant questions indicate a thirst for knowledge regarding arrangements for private provision of public services around the world, there was also marked enthusiasm about local efforts in privatization of public services as described by the three local speakers.

The group working sessions scheduled for the second day provided participants with an opportunity to not only share their experiences and doubts, but to apply the concepts presented and discussed throughout the seminar to identify alternatives and solutions suitable to the Czechoslovakian context. Seminar participants were assigned to working groups, each group responsible for discussing local situations, and presenting alternative solutions to the rest of the audience. Topics discussed included:

- existing regulatory constraints to the transfer of government assets
- financing of infrastructure projects
- joint ventures with foreign companies
- environmental/political issues in landfill siting
- performing financial/cost analysis of public services
- technical aspects of solid waste operations (routing, monitoring, efficiency analysis etc.)

Bratislava Seminar

Thirty four participants represented 28 Slovakian cities at the seminar held in the Forum Hotel in Bratislava in early September. This seminar was conducted in a format identical to that of the seminar in Prague, the only variant being that Deputy Mayor of Bratislava, Mr. Peter Benuska, delivered the introductory speech. The issues of concern discussed during group presentations at this seminar included:

- identification and selection of landfill sites
- waste reduction and recycling schemes
- fee and rate setting (particularly in the context of rising costs and resistance from the community to pay for a service)
- regionalization of infrastructure projects
- financing of infrastructure projects
- joint ventures
- service technology and equipment

II. PARTICIPANT EVALUATION

This evaluation is based on a questionnaire distributed to participants of the "*Technical Services in the Market Transition*" seminars which took place last fall in Prague and Bratislava. In October 1992 Price Waterhouse mailed questionnaires to all 76 seminar participants, 42 in the Czech Republic and 32 in Slovakia. By early 1993 we received and translated 31 responses, 19 from the Czech Republic (a 45% response rate) and 12 from Slovakia (a 37% response rate).

The results presented below are tabulated on a per question basis: the original question, as it was posed to all participants, is followed by responses from each republic. Responses to questions 1,2,5 and 8 are presented in table form (either a numerical ranking or a yes/no answer). The remaining four questions involved longer answers, and include, when possible, direct quotes from participants.

QUESTION NO. 1:

Please rank the presentations according to level of detail:

1=Too Detailed
3=Adequate
5=Too General

CZECH REPUBLIC						
SEMINAR PRESENTATIONS	Number of Responses					
	Percentage of Total Responses					
	Too Detailed (1)	(2)	Adequate (3)	(4)	Too General (5)	N/A
"The Decision to Privatize"			15	1	2	1
			78.9%	5.3%	10.5%	5.3%
"Contextual Issues in Private Sector Participation"	3	1	9	4	1	1
	15.7%	5.3%	47.4%	21%	5.3%	5.3%
"Methods of Private Sector Participation in Solid Waste Management"	1	3	11	2	1	1
	5.3%	15.7%	57.9%	10.5%	5.3%	5.3%
"Monitoring Private Contracts for Public Services"	1	2	12	1	2	1
	5.3%	10.5%	63.2%	5.3%	10.5%	5.3%
"Assessing the Financial Costs of Public Services"		1	7	5	5	1
		5.3%	36.8%	26.3%	26.3%	5.3%
"Assessing Operational Efficiency of Public Services"	1	1	8	5	3	1
	5.3%	5.3%	42.1%	26.3%	15.7%	5.3%

QUESTION NO. 1
(Cont'd)

SLOVAK REPUBLIC						
SEMINAR PRESENTATION	Number of Responses					
	Percentage of Total Responses					
	Too Detailed (1)	(2)	Adequate (3)	(4)	Too General (5)	N/A
"The Decision to Privatize"	2	2	8			
	16.7%	16.7%	66.7%			
"Contextual ues in Private Sect. Participation	3	1	7			
	25%	8.3%	58.3%			
"Methods of Private Sector Participation in Solid Waste Management"		1	9	1	1	
		8.3%	75%	8.3%	8.3%	
"Monitoring Private Contracts for Public Services"	3	1	7		1	
	25%	8.3%	58.3%		8.3%	
"Assessing the Financial Costs of Public Services"		1	6	2	3	
		8.3%	50%	16.7%	25%	
"Assessing Operational Efficiency of Public Services"		5	3	1	3	
		41.7%	25%	8.3%	25%	

The results indicate that the majority of participants in both the Czech Republic and Slovakia regarded the level of detail of presentations as adequate. Based on this survey, "The Decision to Privatize" received the highest rating in The Czech Republic with 78.9% of participants rating the presentation's detail as adequate. In Slovakia the highest ratings were given to "Methods of Private Sector Participation in Solid Waste Management" and "The Decision to Privatize" with 75% and 66.7% respectively of participants regarding the level of detail as adequate. 41.7% of Slovakian participants rated "Assessing the Financial Costs of Public Services" as slightly too detailed.

QUESTION NO. 2:

Was the length of the seminar optimal?

	Yes	No	too short	too long
Czech Republic	17	2	1	1
Slovak Republic	9	2	1	

QUESTION NO. 3:

Did the seminar include some problems about which you would like to know more? Please specify.

The Czech Republic

Many of the Czech participants expressed a desire to learn more about certain problems associated with the privatization of municipal services. While many cited an interest in information on particular services not included in the seminar, several expressed a desire for further knowledge on the seminar topics in areas such as contract monitoring, the measurement of contractor efficiency, and the assessment of taxes on the private contractors. Participants also declared interest in learning more about a number of services including:

- Sports facilities (stadiums, skating rinks, pools, etc..)
- Waste recycling, sorting and disposal
- Park maintenance
- Street lighting
- Road/street maintenance
- Traffic signals

Slovakia

Slovakian participants expressed a desire to learn more about a wide-ranging group of issues relating to the privatization of municipal services. Their concerns revealed a more sophisticated grasp of the issues than found in the Czech Republic. Several respondents wanted to learn more about the financing of technical services in privatized scenarios. Their questions pertained to general financing requirements, efficiency of different types of financing, and control and guarantees necessary for higher-risk technical services. Other general issues mentioned included the role of competition and the problems of individual towns and cities. Finally, two respondents wanted to learn more about specific solid waste issues, including:

- Brief summary of various technologies used for solid waste recycling
- Efficiency of solid waste storage: biogas, biomaterial, profits of landfilling.

QUESTION NO. 4

Have you encountered problems concerning the participation of the private sector which were not included in the seminar but about which you would like to have more detailed information? Please specify.

The Czech Republic

Several respondents pointed to general difficulties that their Czech towns or cities had experienced with private service providers. The three general problems noted included contract development, contract monitoring and project financing. In addition, a number of Czech respondents listed individual service sectors in which they were having difficulties with the private sector, indicating that problems with privatization have yet to be concentrated in particular services and are more dependent on individual agreements and contractors. The individual services listed include:

- Road maintenance
- Snow plowing
- Park/lawn maintenance
- Central heating services
- Hospitals/health centers
- Housing management
- Cemetery management

Slovakia

Many Slovakian participants expressed little or no difficulties in their dealings with private sector contractors. Several, however, cited general problems, such as the need to assist small and medium sized companies, the difficulties in working out the details of private sector agreements, and the necessity to carefully choose the services to be privatized. Only one service, funeral/cemetery management, was cited as a particular problem for municipal officials.

QUESTION NO. 5:

Have you attended another USAID-sponsored seminar on infrastructure?

	Yes	No
Czech Republic	1	18
Slovak Republic	2	10

QUESTION NO. 6:

Evaluate the general information, examples and experiences from abroad and the discussion about specific Czech and Slovak problems. Do you feel that some of these problems were given too much attention, too little attention, etc.? Please specify.

The Czech Republic

Several respondents in the Czech Republic expressed their wish that the seminar had given a different emphasis on certain examples. While one suggested that too little attention was placed on Czech examples, another stressed the need to discuss Czech issues to a greater extent in light of European examples. Another suggested that more examples in general would have been helpful. Other respondents found the seminar's emphasis appropriate, stating that "the themes discussed in the seminar were properly chosen" and the "examples were relevant." Finally, one respondent would like to have learned more about reform of the legislative obstacles to privatization.

Slovakia

Most Slovakian respondents felt that the amount of attention given to specific problems was adequate. Five of the seven respondents classified the seminar material as good or very good. Three of these participants went on to cite points that they particularly enjoyed. These included the discussion of practical examples, the group discussions, and the international examples of municipal privatization. Two participants suggested that the seminar's balance should have been different. One cited the discussions on solid waste collection as too detailed and another stressed the need for a more complete discussion of specific problems (as opposed to common ones). The latter suggested more specialized groups with more focused themes.

QUESTION NO. 7:

Do you think that the work in groups was helpful? Please explain your answer.

The working groups allowed participants a chance to compare and contrast their experiences with others. The working group sessions were an overwhelming success in both the Czech and Slovakian seminars, with respondents praising the opportunities to learn from other cities, the possibility to network with other leaders, and the general framework for creative discussion. Several participants suggested the need to improve the group sessions by placing a coordinator in each group, lengthening the sessions, and creating more specialized groups comprised of leaders facing similar issues. The following comments on the group discussions were cited in each republic:

The Czech Republic

- "The comparison of problems, intentions and experiences was good."
- "Group discussions allowed for concentration on a given topic."

- "Allowed participants to share experiences and find an inspiration."
- "A good chance to network."
- "We were brought to active discussion."
- "Groups need coordinators to guide the discussion, Czech and Slovaks are not used to this dynamic."
- "Sessions were too short. We needed more time for discussion and conclusions."

Slovakia

- "The possibility of active public participation was good."
- "The discussion in groups allowed us to review the issues of the seminar."
- "Yes, because it explained the theory. But we needed more time."
- "Yes, we were able to directly discuss the lectures based on our own experiences."
- "Yes, it was useful. In groups we discussed in detail the problems of our towns and villages. We exchanged our experiences, how to solve our problems, and spoke about advantages and disadvantages."
- "Not in this case, because the members of the group were put together by chance. They preferred to solve their own problems, which differed. It would be better to create groups with similar theoretic range."
- "...was too much because each town has its specific problems that cannot be identified in such a short time."

QUESTION NO. 8:

Were there themes discussed at the seminar that you found irrelevant to your work?

	Yes	No
Czech Republic	2	17
Slovak Republic		12

Participants who responded affirmatively were asked to explain their response in more detail. Of the two Czech participants who answered positively, one cited monitoring of private agreements as irrelevant. The other remarked that as the basics of the agreement were sufficient for his purposes, he found the specific components of the agreement superfluous.

III. SEMINAR AGENDA/PRESENTATIONS

KEY-NOTE ADDRESS

by

DR. JIRI EXNER

DEPUTY MAYOR, PRAGUE

Czech Conference

Ladies and Gentlemen,

It is a pleasure to be present as a representative of the Capital of our State at the opening of a seminar, the importance of which needn't be emphasized. Providing with technical services belongs to those functions of self-government that are taken for granted. It may be the reason why among economic reformers there ara not many specialists putting themselves a question what will happen to the technical services in the course of one of the most extensive transformation which our civilization could know. It is a paradox and unpleasant situation because a failure of the basic functions of services in cities, towns and communities would be mistaken by citizens for a principal political failure of the present government and at the nearest elections the whole process of the economic reform could be endangered. At the same time the question how to ensure in the market economy services in a good quality which ofen are, because of their origin or due to social and political reasons unprofitable, represents a difficult problem from teoretical point of view and as regards its realization that is worth being studied and investigated from various points of view.

I take for granted that legal and political aspects of various well-tried models will bediscussing in the following hours and days. A pair of steps leading to the realization of some models may succeed to be proposed.
I am, however, deeply sure no matter what resulting variants may be chosen we can hardly expect somebody will advise us the way how to realize them, we shall have to think over, do the mapping and break through it ourselves because we have to change not only our unfunctional economy but our defective thinking, as well, and we have to pass through a qualified self-educational process.

As for this seminar our psycho-social problems, from a certain point of view, are not in the center of the matter, yet I take for suitable to mention them and reccomend their taking into consideration at following discussions as they are of crucial importance in decission-making processes taken by the State and municipal authorities.

As generally known, Czechoslovakia held since 1948 a world primacy as for nationalization of the wholeeconomy. It is hardly to be said if that was a work of the Soviet advisors or an initiative of our communist leaders taking over and developing dilligently the Soviet model.

A total substitution of an active and effective citizens' spirit of enterprise by the State planning bueraucracy in the last 40 years not has only brought Czechoslovakia near to the economic level of the Third World and created a curious strúcture of legal, economic and personal relations, releasing of which from their reciprocal interlacing represents a historical unpreceding experience but also has on its mind a very resisting system of political and psychological barriers being a strong irrational element in the process of transformation. These barriers are more or less fixed in subconsciousness of the all citizens, including those who are taking performing of the economic reform for their mission to which they ofen devote their personal lives and their health.

It is necessary to take the reflection of this state into accoount at accepting each decision, but as you easily can imagine, the ability of this reflection is a very varying factor and decision-making processes, particularly by the collective organs are quite incalculable.

I like to mention the questions as follows:

1) prejudices that intermediately slow down development on the local level and make it more complicated
2) a trend to regard the matter-of-fact problems from an ideological point of view
3) an unwillingness to take in responsability for positive

decisionsand/or inability to take in responsability for consequences resulting from the fact that the decision has not been done and for an unfunctionl delegation of the authority and responsability at municipal authorities.

I am going to try to explain in short what I mean. In the last tens of years undertaking was regarded as something inmoral, incorrect and even put out of law. Incomes of inhabitants were strongly nivelized and they could not be influenced by any good ideas or a good quality of work. And yet the poor and the rich did exist. However the high incomes had above all communist notables and their protégés to whom economic activities criminally of far greater consequence were tolerated rather than an unallowed enterprising. Subconsciously, we can hard put up with an imagination that dealings convenient for all those who participate may exist. We were accustomed to the fact that if anybody made a profit it was only because he robbed somebody, took a bribe etc.

Provided we do not take into account the fact that at the present time due to democracy and price liberalization many people are in temptation to earn "quick money" in such a way. They are the people who could not do that sooner just because they did not have any political protectors. Therefore we ofen can notice a sick suspicion even in cases of quite correct economic transactions.

As for magistrates of our cities and towns and managers of our companies this means; the more lucrative or convenient business they deal with the more they are watched by the whole public, limited by various controlling mechanisms etc. A great deal of enthusiasts have been brought to apathy because of wain struggle.

The economic transformation is a very complicated process watched very attentively by public. For a better orientation a set of slogans characterizing the whole trend of the reform have been created by statesmen and citizens. If these slogans are applied to individual cases, they ofen come into discrepancy with the common sense, as far as there is

a willingness to think about problems - however this is rather a scarceness - people identify themselves rather with symbols than with the program

One says for example:

Free market and competition are the only functioning and regulating mechanism - authorities are not allowed to intervene in the economy.
Or: Communities are no subject of undertaking - the undertaking is for private persons.

However, nobody is able to answer the question whether the public transport or the water piping system in a city or a town split into several private companies would serve to citizens better than a monopoly municipal enterprise.

Decision-making mechanisms at local authorities are affected by the above mentioned problems still more than would be necessary because the system's defects still outlast in them.

A system of elected authorities and their adminsitrations enables to leave the decisive authorities to an anonymous collective body, whereas the responsability for an executive decision is relating to a person in a sufficient way. Magistrates and their officials could be divested due to their decisions in any time (for example due to a suspicious convenience or a discrepancy with a slogan), however, nobody takes any responsability for what happens if an accepted decision is not realized and mostly some time after no ohter decision is realized.
The golden rule of the communism "who makes nothing - - spoils nothing" continues to be valid in the further years.

After this general political introduction I would like to [illegible] contents of several technical services provided in our city. I emphasise that everything has been carried out up until now by organisations which took upon Prague as their founder [illegible] practice, that the city council can appoint and dismiss the [illegible] and that the city finances the business from its own budget. In all the property of the business belongs to the state and [illegible] profits are absorbed by the state budget. This situation in which cities in Czechoslovakia finance state businesses from their own budgets - is regrettable and paradoxical and is excusable only by the equally regrettable fact that the community budgets depend for more that 90% of their income on the Budget of the republic

In connection with the tax reform being prepared and the privatisation of our economy in general, our city will have to secure, for example the future of the follwing businesses and operations designated as technical services:

- public transport: over a year the rolling stock covers 150 thousand kilometres, transporting 1.5 thousand million people. In total citizens and visitors to Prague travel 17 thousand million km annually. This service is maintained by 15 thousand workers and subsidies of about two thousand million crowns - in other words, 1/3 of the total city budget.

Disposal of the city's 1/2 million tons of waste does not cost too much money. But this does not take into account the necessity of extensive investment in this service - in three months the existing storage capacity will be exhausted and no substitute has yet been provided. The elimination of mixed materials has not been ensured anywhere in Czechoslovakia up until now.

The city woodland, encompassing 2,700 hectares, is at present looked after by 100 workers. The majority of this has been damaged by [illegible] and emissions, fungal attack and so on. We have the resources to extract timber only when trees fall down naturally or in exceptional circumstances. The public municipal green land organisation has a further 2,000 hectares. 550 people look after it at a total cost of about 135 million crowns.

Protected land demands independent attention (...) (...) varying sizes).

Water provision is undertaken by a network of basic water supply of a total length of 3,000 kilometres. 30% of this has outlived its recommended life-span (70 years). In total 30% of drinking water is lost in distribution. The present sources are without [illegible]. The total size of Prague sources is about 9.5m3\s. Demand (...) industry) is about 500 litres daily for every Prague citizen.

The basic sewerage network consists of canalisation of 2,300 km in length, of which 660 km is walled sewer with large diameter. The drainage area is equivalent to about 40% of the total area of the city. Many of the outlying areas (which became part of Prague around 1970) do not yet have their own canalisation. The state of canalisation is similar to the state of the water supply distribution network.
The current water purification system is hardly functioning.

The problems of privatising technical services and the influence of the city on this process will make the necessary wider investment considerably more complicated and the state's involvement in this investment is as yet unclear.

The city budget for the next few years remains largely unknown. The resource part and the construction expenditure part, in particular, depend on a knowledge of the division between government and private sectors. I believe that there can be no doubt as to how important are detailed plans for possible economic transformation of technical services are in our attempt to extricate ourselves from the vicious circle in which we operate.
Thus I sincerely thank the organisers for arranging this seminar and for the opportunity to take part in it.

KEY-NOTE ADDRESS

by

PETER BENUSKA

DEPUTY MAYOR, BRATISLAVA

Slovak Conference

Ing.arch Peter B E Ň U Š K A,
Deputy Mayor for the development, architecture and environment of the capital of the Slovak republic Bratislava

THE PRIVATIZATION OF CITY SERVICES

An opening paper at the seminar "Technical services in the period of transformation to the market economy" organized by the Anglo-American Business Institute, US AID and Price Waterhouse in the Forum hotel in Bratislava from August 1 to September 1, 1992.

1. PARTICIPATION BY THE PRIVATE SECTOR IN THE PROVISION OF BRATISLAVA CITY TECHNICAL SERVICES IN THE PAST

This is not a complex historical look but a reminder of the reality that it has been a constant problem, not only for us, but abroad as well.

For example in the area of supplying the town with drinking water, Bratislava (Preßburg, Poszony) already in 1881 concluded a contract with the private company Korle on which underground sources of high-quality drinking water were found, and in 1886, the water works on the Danube island Sihoť (Käsemacher) were built. The above-mentioned company was supplying residents with water until 1894 when the city bought both sources and equipment, and founded the city water works company. One part of Bratislava has been supplied from this source up to now, and, the Bratislava Water and Sevage Works was till 1990, at least in name, a city company. It is paradoxical that during the period of privatization of many services, it fell under the authority of the Ministry of Water and Forestry of the Slovak Republic, in other words, into state ownership and management.

Similarly, other parts of city technical infrastructure also transfered from an originally private or the municipal sector into the state one. For example a private Austrian gas company granted its services to Bratislava from 1869. The city bought the gasworks that were located in the area of the present-day chemical technological faculty in 1894. The city council was responsible also for supplying energy and so they had a power station built in 1907.

The above-mentioned examples illustrate that private or municipal participation was the norm in the past, also in the areas that are the domaine of the state sector for several decades.

2. THE CREATION OF LEGISLATIVE CONDITIONS FOR THE TRANSFORMATION OF CITY SERVICES DURING THE PERIOD AFTER 1989.

From the standpoint of local public management, the historically most important laws were those that re-established the independent legal existence of towns and villages in the form of elected administrative bodies. The laws of the Slovak National Council No. 369, concerning the general establishment from Sept 6, 1990, and No. 377, concerning the capital city of the Slovak Republic, Bratislava, from Sept 13, 1990, together defined the role of the administration.

Part of this role was to ensure the public supply of services, in other words:

- the contruction, management, and maintenance of the local road network, public lighting, public landscaping, public greenery, graveyards, cultural, sporting, and other general facilities.
- The removal and disposal of communal waste
- the water supply
- the removal and purification of sewage waters

- public transport

While all roles of the town and villages in the area housing have not yet been clearly defined, all responsibilities in the management of former state property have been transferred to municipal ownership by means of the Slovak N.C. law No. 138, which concerns municipal property.

The division of the operation of state management and administration is stated in the Slovak N.C. law No 518/1990, which concerns the transfer of the establishing of managing functions of National Committees to the municipalities, central bodies of state administration and other bodies of local state administration. As stated above, it is paradoxical that, according to this law, the Bratislava Water and Sewage Works came under the authority of the Ministry of Water and Forestry of the Slovak Republic, even when, according to law No. 369/1990, the town is responsible for the problematics of water management.

The conditions for the transfer of state ownership to other physical or legal entities were determined by the Slovak N.C. No. 427, from Oct 25, 1990. In the brief survey of the most important legal measures in the communical-political field, the privatization laws are deliberately not included, because they are included under the state bodies' powers.

In conclusion, we can state that the legal limits for the transformation of city services in Slovakia were created during the period of Sept 1990 to May 1991, and since then, further details have been worked out to make it a sufficiently solid base for the process of transformation

3. REAL CONDITIONS FOR THE PRIVATIZATION OF CITY SERVICES AT THE PRESENT TIME.

The independence of decision-making in administration is still limited by their dependence on financial grants from the state.

Once all towns and villages had been legally established in 1990, their share of independent revenue, used to finance their needs, gradually increased, but even at the end of 1992, we cannot yet speak about any economic independence. The cessation of the process of administrative financial independence will be an important element in the development of municipal democracy in our country. It is the basic condition for the development of the specificity of the village, town or region.

The decentralised process in the economy is one of the conditions for tranformation to a market economy. According to the data of the Slovak Bureau of Statistics, during the establishment of smaller state, cooperative, or town companies, a new organising structure - the private sector - was quickly developing in more than one legal form. The number of privately-operating citizens - physical entities not registered in the Business Index - grew the fastest. From a total number of almost 12,300 commercial organisations in the Slovak Republic, roughly one half (6239) were private on Dec 31, 1991.

Other statistical data from Dec 31, 1991 may be surprising:

- In the Slovak Republic, there were 1845 (number illegible) foreign and international organisations in operation. (12.5% of the total number).
- In the Slovak Republic, more than 200,000 citizens were indulging in private business, not registered in the Business Index, one fifth of which in the capital of the Slovak Republic, Bratislava. (40,481, plus 417 private Bratislava entrepreneurs registered in the Business Index)

From the point of view of the development of non-productive services, among them the overwhelming majority of "city technical services", there is a characteristically sharp growth of work opportunities. In the area of communal services, accomodation, and Czech Republic services, the number of employed persons in the Slovak Republic increased from 16,000 in 1985, to 60,000 in 1991, a four-fold increase. The above-mentioned data created the conditions for the privatisation of many city services. The entry of the private sector is still quite restricted by the low capacity of its capital means.

In this first phase, services have been contracted with the private sector in the form of a subsidy by the town corperation. In the second phase, a more significant share of private companies, such as owners or managers of individual facilities, are expected. The variety of their selection and the creation of their competitive means is the condition for a higher standard of provided services. Of course, only when quality will be the one and only critierion for selection by the municipal leadership.

PRESENTATION NO. 1

"THE DECISION TO PRIVATIZE"

Decision to Privatize

Issue # 1: Service Definition

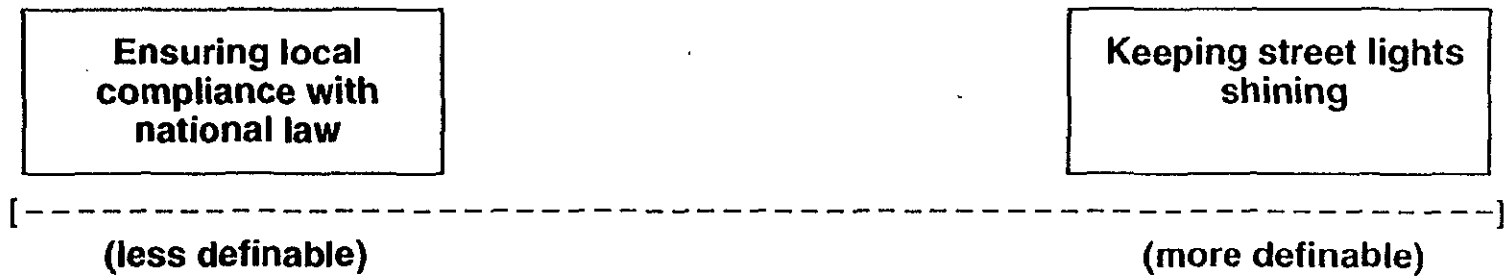
Clear service definition is essential for:

--Drafting specifications for bidding
--Choosing among competing bidders
--Contract monitoring

Decision to Privatize

Issue # 1: Service Definition

Services vary in definability



Decision to Privatize

Issue # 2: Competition

Competition/monopoly more important than public/private

Source of efficiency incentives

Initial competition: Multiple potential suppliers

Ongoing competition:

--Potential (acceptable)

--Actual (ideal)

Decision to Privatize

Issue # 2: Competition

Most important lesson: The more competition, the greater the efficiency gains from privatization

First cautionary note: Sometimes change is desirable even without efficiency gains

Second cautionary note: The less competition a service allows, the more private firms will favor privatizing that service

Third cautionary note: Following privatization, firms will usually try to weaken competitive forces

Decision to Privatize

Issue # 3: Monitoring

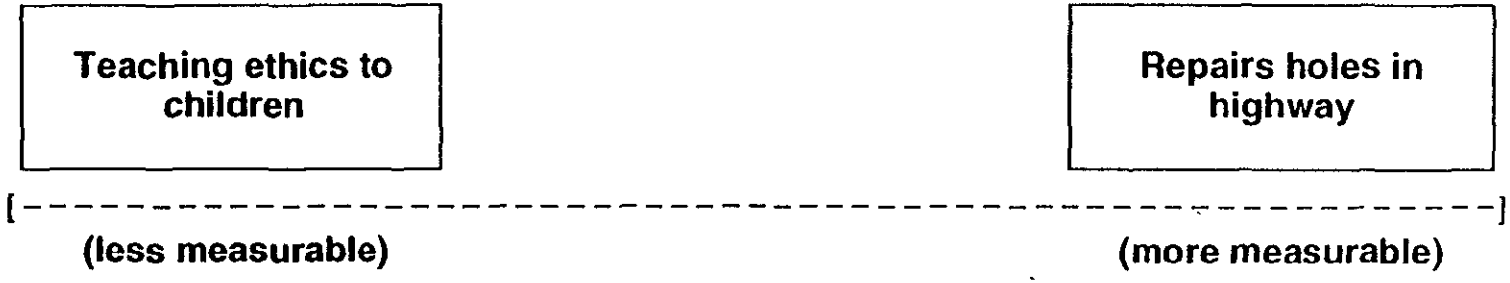
Accurate performance monitoring needed for

- --Meaningful competition
- --Fair compensation
- --Contract enforcement
- --Cancellation or renewal
- --Future privatization decisions

Decision to Privatize

Issue # 3: Monitoring

Services vary in how well performance can be measured and monitored



Variants of Privatization

1. **Private-Municipal Contracting**
   --Municipal responsibility?
   --Need for uniformity?
   --Special expertise needed for definition or evaluation?

2. **Franchising**
   --Most benefits go to individual citizens?
   --Citizens good judges of performance?
   --Limited efficiencies from central financing/administration?

3. **Full Market**
   --All benefits go to individual citizens?
   --Advantages to diversity?
   --Citizens good judges of performance?

Concluding Points

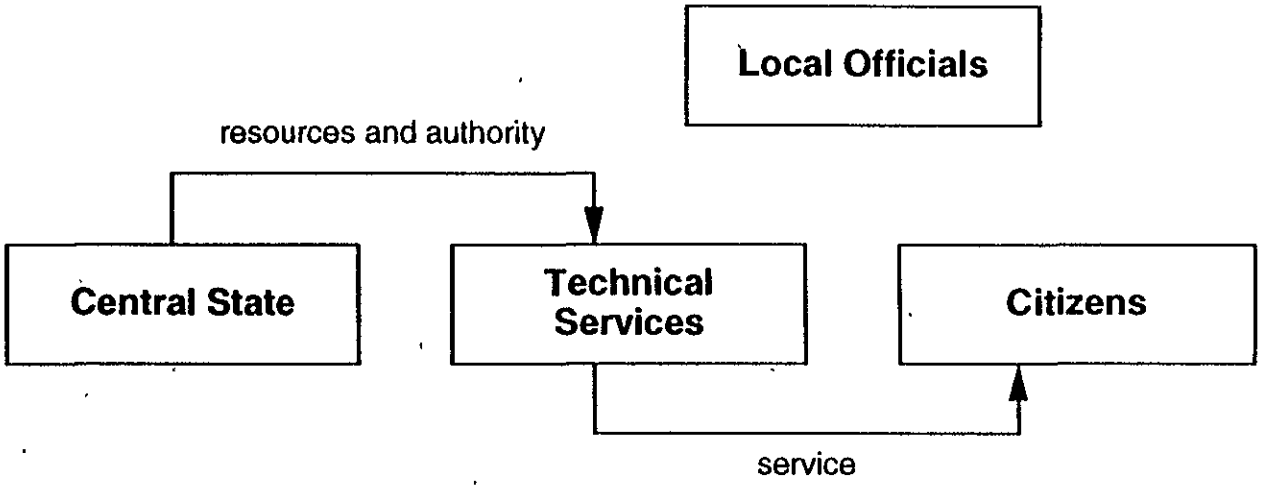
1. **Criteria and lessons apply differently in different locales**

2. **Administrative capacity matters in privatization decision**

3. **Politics will not be easy**
   --Pressures to privatize where inappropriate
   --Pressures not to privatize where appropriate

4. **Crucial point in history; worth great effort to get it right**

Public Service System
Pre-Revolution



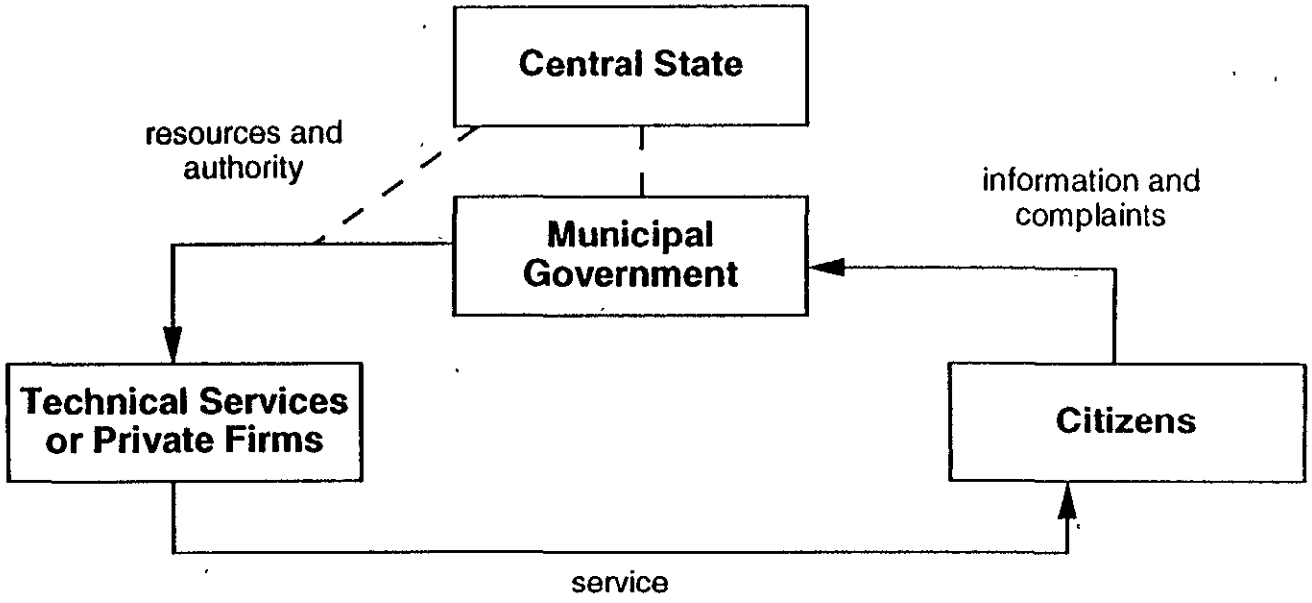
Advantages:

--Simplicity
--Uniformity

Problems

--Anti-democratic
--No incentives for efficiency
--Poor adjustment to local conditions
--Weak quality control

Public Service System
Basic Structure



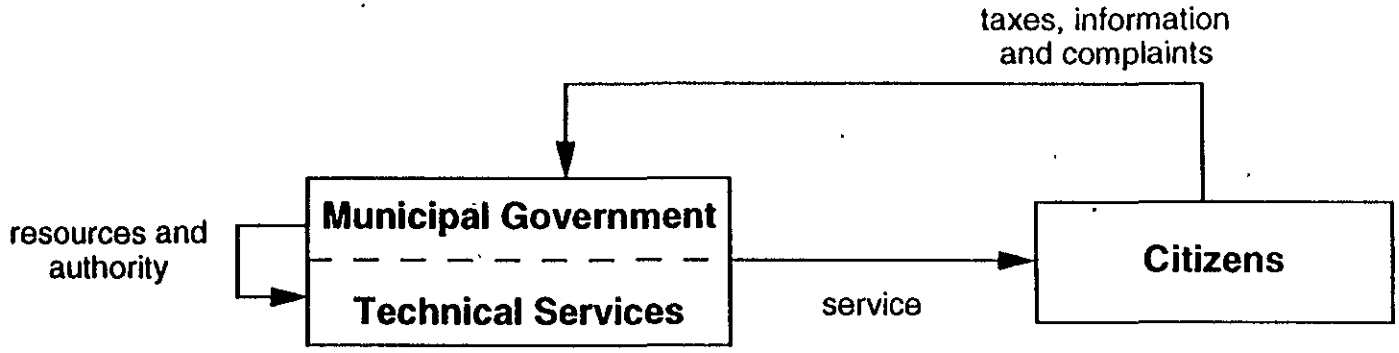
Advantages:

--Local autonomy and discretion
--Better information flow
--More accountability
--Greater incentives for efficiency

Problems

--Local financial pressures
--Challenge of creating new systems and procedures
--Need to decide how much, and what, to privatize

Public Delivery Model



Advantages:

--No organization barrier between government and supplier
--Potentially superior efficiency incentives
--Potentially greater innovation and flexibility

Problems

--Government lacks information about supplier
--Requirement for monitoring and feedback
--Vulnerability to fraud or monopoly

PRESENTATION NO. 2

"CONTEXTUAL ISSUES IN PRIVATE SECTOR PARTICIPATION"

CONTEXTUAL ISSUES OF PRIVATE SECTOR PARTICIPATION

CONTEXTUAL ISSUES

EFFICIENCY ISSUES

ACCOUNTABILITY ISSUES

MANAGEMENT ISSUES

LEGAL ISSUES

INSTITUTIONAL ISSUES

FINANCE ISSUES

COST ISSUES

EFFICIENCY ISSUES

ACCOUNTABLE -- RESPONSIVE TO PERFORMANCE MONITORING

PRODUCTIVE -- SIZE, AGE, FLEXIBILITY

FREEDOM OF ACTION -- FROM BUREAUCRACY AND POLITICS

CONTESTABLE MARKET -- FREE OF COLLUSION, CARTELS, PREDATORY PRICING

EFFICIENCY SPECIFICS IN SOLID WASTE SYSTEMS:

Low cost systems (whether public or private) have:

- Smaller Crews
- Younger (and/or more productive) Crews
- Lower Absenteeism
- Lower Wages
- Lower Benefits Costs
- Flexible Work Schedules
- Efficient Vehicle Routing
- Better Designed Vehicles
- Standardized Vehicle Fleets
- Managerial Incentives
- Faster Repair Cycles
- Competition/Contestability

ACCOUNTABILITY ISSUES:

FIDELITY TO PUBLIC VALUES

EQUITABLE EMPLOYMENT OPPORTUNITY

FAIR WAGE -- APPROPRIATE COMPENSATION

FAIR BENEFITS -- MEDICAL, DISABILITY, PENSION

OCCUPATIONAL SAFETY AND HEALTH STANDARDS

ENVIRONMENTAL STANDARDS

EQUITABLE SERVICE DELIVERY

AFFORDABLE SERVICE DELIVERY

MANAGEMENT ISSUES:

COMPENSATION FOR LABOR and PROFESSIONAL STAFF

MANAGEMENT FLEXIBILITY -- OVERTIME, WORK HOURS, HIRE/FIRE, PROMOTION

SPAN OF MANAGEMENT

ABILITY TO APPLY INCENTIVES FOR PERFORMANCE

ABILITY TO APPLY SANCTIONS FOR NON-PERFORMANCE OR ILLEGAL ACTIONS

ABILITY TO CONTRACT FOR SERVICES

FREEDOM TO RECOVER COSTS

FINANCE ISSUES:

COST OF CAPITAL -- FOR GOVERNMENT VERSUS PRIVATE BORROWERS

HIDDEN SUBSIDIES -- FUEL, ELECTRICITY, WATER, WASTEWATER TREATMENT

ACCESS TO CAPITAL -- CENTRAL VERSUS LOCAL GOVT. -- SMALL VERSUS LARGE PRIVATE COMPANY

CUSTOM DUTIES, VAT, OTHER TARIFFS TO PRIVATE SECTOR

HIDDEN COSTS OF CORRUPTION -- POLITICAL MANIPULATION COSTS, PAYMENTS FOR PAYMENTS

FREEDOM TO RECOVER COSTS AND SET USER CHARGES

LEGAL ISSUES:

COMPETITIVE AND FAIR PROCUREMENT PROCEDURES

COMMERCIAL CODE -- TO ENABLE A "LEVEL PLAYING FIELD"

ENVIRONMENTAL STANDARDS

OCCUPATION HEALTH AND SAFETY STANDARDS

FAIR LABOR REMUNERATION

REPATRIATION OF INVESTMENT PAYBACK AND PROFIT

FOREIGN OWNERSHIP OF LAND AND OTHER PROPERTY

IMMIGRATION OF FOREIGN PROFESSIONALS

TAX REQUIREMENTS

INSTITUTIONAL ISSUES:

ABILITY OF GOVERNMENT TO:

- WRITE AN ADEQUATE CONTRACT OR AGREEMENT
- CONDUCT A FAIR AND COMPETITIVE PROCUREMENT
- MONITOR PERFORMANCE
- MEET ITS PAYMENT REQUIREMENTS
- MANAGE RISKS TO INVESTORS:
  - NATIONAL INFLATION
  - CURRENCY CONVERTIBILITY
  - FUEL PRICES
  - IMPORT BANS, QUOTAS, AND DUTIES
  - REGULATORY CHANGES

COST ISSUES:

COSTS OF GOVERNMENT SERVICE DELIVERY NOT KNOWN -- EXPENDITURES DISAGGREGATED AND SOME HIDDEN

COST INDICATORS NOT MONITORED -- PRODUCTIVITY PER WORKER, PER VEHICLE, PER ROUTE -- COST/TONNE

PLANNING FOR LOW COST SERVICE DELIVERY NOT DONE

QUANTITY OF WASTE NOT KNOWN -- NO WEIGHBRIDGES

LIMITED ECONOMIES OF SCALE

COST FOR COLLECTION ARE 75% TO 95% OF TOTAL COST

WASTE PRODUCTION VERSUS INCOME

	Low Income Country	Middle Income Country	Industrialized Country
MSW Quantity Tonne/capita/year	0.2 T	0.3 T	0.6 T
Average Income $US/capita/year (in 1988 $US)	350 $/c/yr	1,950 $/c/yr	17,500 $/c/yr

COLLECTION COSTS

	Low Income Country	Middle Income Country	Industrialized Country
MSW Collection $US/tonne	15 - 30 $/T	30 - 70 $/T	70 - 120 $/T
% Capital	40%	30%	10%
% Labor	15%	40%	70%
% Other O&M	45%	30%	20%
MSW Collection $US/capita/year	3 - 6 $/c/yr	9 - 21 $/c/yr	42 - 72 $/c/yr
Collection Cost As a % of Income	0.9 - 1.7 %	0.5 - 1.1 %	0.2 - 0.4 %

DISPOSAL COSTS

	Low Income Country	Middle Income Country	Industrialized Country
MSW Cleansing $US/tonne	30 - 60 $/T	60 - 140 $/T	140 - 240 $/T
% Capital	30%	20%	25%
% Labor	40%	70%	65%
% Other O&M	20%	10%	10%
MSW Cleansing $US/capita/year	0.6 - 1.2 $/c/yr	1.8 - 4.2 $/c/yr	4.2 - 7.2 $/c/yr
Cleansing Cost As a % of Income	0.2 - 0.3 %	0.1 - 0.2 %	0.02 - 0.04 %

TRANSFER COSTS

	Low Income Country	Middle Income Country	Industrialized Country
MSW Transfer $US/tonne	3 - 5 $/T	5 - 15 $/T	15 - 20 $/T
% Capital	65%	50%	35%
% Labor	10%	25%	45%
% Other O&M	25%	25%	20%
MSW Transfer $US/capita/year	0.6 - 1.0 $/c/yr	1.5 - 4.5 $/c/yr	9.0 - 12.0 $/c/yr
Transfer Cost As a % of Income	0.2 - 0.3 %	0.1 - 0.2 %	0.05 - 0.07%

PRESENTATION NO. 3

"METHODS OF PRIVATE SECTOR PARTICIPATION IN SOLID WASTE MANAGEMENT"

METHODS

OF

PRIVATE SECTOR PARTICIPATION

IN

SOLID WASTE MANAGEMENT

SOLID WASTE ACTIVITIES FOR PRIVATE SECTOR PARTICIPATION

SERVICE DELIVERY:

- STREET SWEEPING
- REFUSE COLLECTION
- RECYCLABLES COLLECTION
- TRANSFER
- SANITARY LANDFILL
- RECYCLING
- RESOURCE RECOVERY

EQUIPMENT MAINTENANCE

OVERALL MANAGEMENT AND PLANNING

BILLING

MONITORING OF PERFORMANCE

STEPS TO ARRANGE

PRIVATE SECTOR PARTICIPATION

STEP 1.

KNOW THE TOTAL COST FOR PUBLIC SERVICE SERVICE

HOW ARE TOTAL OWNING, OPERATING, AND MAINTENANCE COSTS DETERMINED?

For every department working on solid waste management:

Estimate the % of facilities and % of equipment associated with work on solid waste management.

Estimate annual cost of depreciation and debt service associated with facilities and equipment.

Estimate annual cost of operation and maintenance associated with facilities and equipment.

Estimate the % of staff associated with work on solid waste management.

Estimate the annual cost of salaries, benefits, and administrative overhead associated with staff.

Separately estimate the above costs for each solid waste management activity, namely:

collection, cleansing, transfer, disposal, and recycling.

STEP 2.

DECIDE WHICH ACTIVITIES MIGHT BE MADE MORE EFFICIENT BY PRIVATE SECTOR PARTICIPATION

WHICH ACTIVITIES ARE INADEQUATELY EFFICIENT OR EFFECTIVE? LOOK INTO ISSUES OF:

lack of facilities and/or equipment
inadequate staffing
inadequate training
labor redundancy
restrictive labor practices
poor fleet maintenance
inadequate supplies
lack of management flexibility
lack of performance monitoring
inadequate laws governing citizen cooperation
lack of citizen education and cooperation
lack of political will and enforcement sactions

STEP 3.

DEVELOP A LONG TERM STRATEGY TO RATIONALIZE PARALLEL ACTIVITES BY PRIVATE AND PUBLIC SECTOR

SAMPLE LONG TERM STRATEGY:

Year 1. Carve out a slice of the service for competitive procurement with private sector -- say 15%.

Set aside at least 30% of service for public sector, to maintain ability and readiness to perform in the case of private sector failure -- and to maintain contestability.

Year 2. Monitor private and public performance and improve public sector service efficiency.

Year 3. Carve out another slice of the service for competitive procurement with private sector -- say 15%.

SAMPLE LONG TERM STRATEGY (continued):

Year 4. Monitor private and public performance and improve public sector service efficiency.

Year 5. Carve out another slice of service for public/private competitive bidding -- say another 15%.

Year 6. Monitor private and public performance and improve public sector service efficiency. Prepare public employees for another public/private competitive bidding.

Year 7. Carve out another slice of service for public/private competitive bidding -- say another 15%.

Year -. As first two contract arrangements expire, put them out for public/private competitive bidding.

STEP 4.

DEFINE OUTPUTS EXPECTED OF BOTH PRIVATE AND PUBLIC SECTOR

WHAT OUTPUTS NEED TO BE DEFINED?

Basic technological approach.

Quantity of services to be provided.

Quality of services to be provided.

Environmental or emmission requirements to be met.

Delivery dates of services, place and method of delivery.

Worker health and safety requirements.

STEP 5.

DEVELOP TENDER DOCUMENT

WHAT NEEDS TO BE SPECIFIED IN THE TENDER DOCUMENT?

Outputs.

Warranties, insurance, and registration requirements.

Financing and bonding requirements.

Permit requirements.

Length of contract.

Compensation method and timing.

Inspections and audit requirements.

Procedures for handling complaints.

Sanctions for poor performance.

Allocation of risks and remedial measures.

Contract termination and step-in rights.

STEP 6.

ADVERTISE PROCUREMENT AND FOLLOW A COMPETITIVE PROCUREMENT PROCESS

STEP 7.

ENGAGE AN INDEPENDENT ENTITY TO MONITOR BOTH PRIVATE AND PUBLIC SERVICE

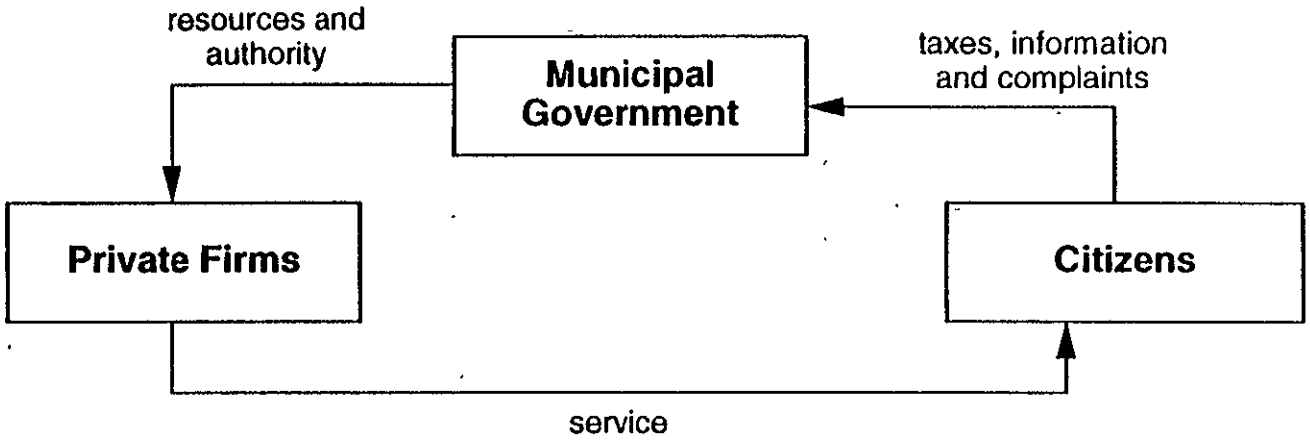
STEP 8.

SHARE THE MONITORING INFORMATION MONTHLY AND WORK TOWARD IMPROVED PRIVATE AND PUBLIC SERVICE

PRESENTATION NO. 4

"MONITORING PRIVATE CONTRACTS FOR PUBLIC SERVICES"

Private Contracting Model



Advantages:

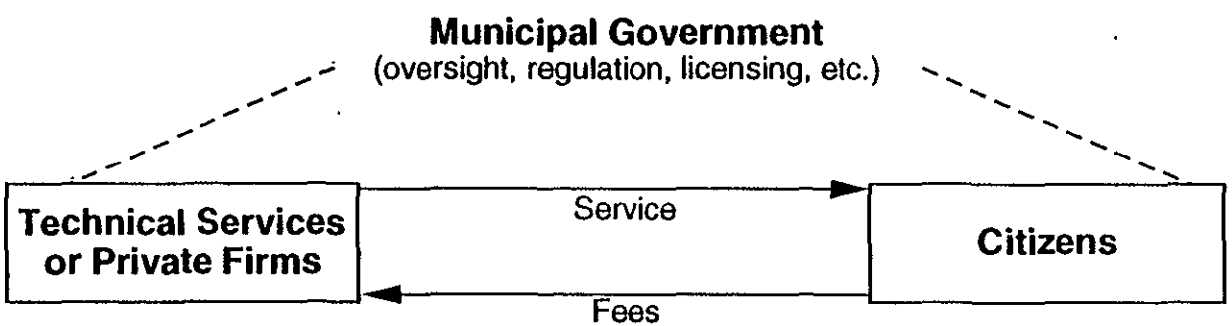
--Change from status quo
--Potentially superior efficiency incentives
--Potentially greater innovation and flexibility

Problems

--Government lacks information and supplier
--Requirement for monitoring and feedback
--Vulnerability to fraud or monopoly

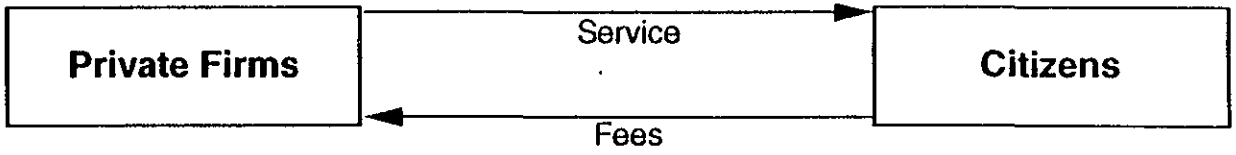
Private Delivery Variant

Franchise Model



Private Delivery Variant

Full Market Model



Strategic Challenge for Municipal Officials:

Identify the right delivery model for each service

- --Public delivery
- --Private contracting
- --Franchising
- --Full market

Barriers and complications

- --Financial pressures
- --Organizational inertia
- --Politics
  - – Local
  - – National

MONITORING PRIVATE CONTRACTS FOR PUBLIC SERVICES: SOLID WASTE MANAGEMENT

Solid waste **contract monitoring** can be defined as that body, responsibility and actions required to insure the effective delivery of the specified service within the legal and financial confines dictated by a contract. Within this definition there are four topics I will discuss:

- protection
- definition of contractual obligations and the service to be delivered
- the legal framework in which the contract is entered
- financial considerations

I will also discuss the essential components of a contract monitoring organization.

I have prepared a practical overview of what is required to monitor a solid waste contract. This is only an overview as there are many varied considerations, related to contract monitoring which are dependent upon the type of service being privatized and the type of privatization mechanism chosen. A franchise mechanism for example, where a contractor collects the revenue, will require different emphasis than a contract where the public entity pays the contractor directly. Likewise, a landfill contract will require different monitoring steps than a collection or transfer station contract. I will attempt to discuss each option briefly in addition to covering issues which are common to all.

Protection

A contract monitoring function is important because it provides protection to public and private entities alike. When a public sector entity privatizes, through contracting or other mechanisms, it is generally charting unknown territory and may be concerned about the dependability of a contractor. The contract monitoring function is viewed as a major portion of the safety net that contributes to the success of the privatization process and ensures that the public entity and the service recipients receive the service to which they are entitled. Protection of the contractor is also an important consideration of the contract monitoring function. No one wins if the contractor cannot provide the service and make a profit. It is very important that the contractor not be required to perform work which is not clearly defined in the contract due to pressure from the service recipient.

In Phoenix, Arizona we require that all refuse containers be placed at the curb by six a.m. on the designated day of collection. Due to factors beyond his control no operations manager can guarantee that a truck will always be at a certain place at exactly the same time. Traffic, truck breakdowns and the amount of refuse placed out for collection, make this impossible. Trucks are routed to pass all collection points at some point during the specified day. If a resident places a container out after the truck passes, it will cost about $3.00 a mile to move a collection

vehicle back to that point and make the collection. This does not account for the driver's costs, which are time dependent. Clearly residents must be trained and exceptions made. However, a contractor cannot eeonomically operate if everyone placed their refuse out for collection whenever it was convenient for them. The contract monitoring function must protect the contractor from abuses for the good of the system.

Privatization should always provide a net positive for the solid waste system in terms of cost and service level. Just as a public entity may chose to privatize in an effort to increase service level and reduce cost, it may also wish to regain control of the solid waste function to effect positive change. If private sector service providers have become sloppy and costly in terms of providing the solid waste service than the public sector may elect to bid on the service itself, in a competitive environment, or take control without a bid. In light of the above, one of the most important monitoring issues to consider is a cost analysis of contract cost versus internal cost. Public entities which have contracted for service over long periods of time tend to take contract cost increases as a matter of course. Price fixing among private service providers is not unheard of. To avoid this trap a public entity can estimate its cost to provide service against their contract costs sufficiently in advance to provide the service themselves when contract renewal is imminent.

Definition of Contractual Obligations

Fundamental to any successful contract monitoring function is the early development of a contract which sets forth a clear definition of the service to be provided. This should include the who, what, when, where and how the service will be provided. Important issues such as requirements for provision of emergency service in times of disaster, how the contractor will respond to labor disruptions, civil strife or "acts of God" should be explored and defined in the contract. Any questions contractors have regarding their responsibilities are best handled in a "*pre-bid*" meeting. A pre-bid meeting allows all contractors the opportunity to ask questions related to the tender document. Requiring all bidders to be present at such a meeting ensure a uniform approach to bid response and equal access to information. It is very important that the legal issues, related to the propriety of holding such meetings, be carefully reviewed prior to entering the privatization tendering process.

Clearly defining the nature of the service to be provided cannot be overstated. In my experience public entities and the service recipient often have different views of the service being provided and or the level of service being tendered. It is not unusual for the public entity to attempt to increase the service level or the geographic area being served as a desired outcome of the transfer to private sector provision. In an effort to mitigate any problems, which might result from any of the above situations, I suggest that the following steps be taken:

1) Prior to initiating a privatization process, conduct a survey to measure the adequacy of the current service system as perceived by the service recipients.

2) Review changes necessary to improve the existing system in terms of the cost benefit ratio derived for the majority of the service recipients.

3) Any geographic increase in service area should be technically reviewed in terms of the challenges which must be met to provide the service. Increased service provision should realistically be assessed to determine the likely cost to the service provider. These increased costs should then be added to the public sectors' financial analysis to determine an acceptable bid. The lesson to be learned is that the difficulty related to monitoring a contract can be substantially reduced if a clear understanding exists among all parties regarding the exact nature of the service to be provided.

The Legal Framework

The legal framework surrounding the transfer of the delivery of public services to the private sector not only substantiates the validity of a contract, but also serves as a recourse in those cases where the parties to a contract are unable to reach a mutual agreement. It also provides a reference during everyday contract monitoring activities. It is essential to have clearly defined arbitration, enforcement and liability clauses in a contract as these will facilitate contract monitoring and oftentimes prevent legal action.

Arbitration Mechanisms

A very important contracting issue, which has a major impact on the contract monitoring function, relates to the arbitration mechanism. Arbitration mechanisms, when incorporated into a document, expedite dispute resolution. It is unrealistic to assume that every conceivable issue related to the performance of a long term solid waste contract could be foreseen in advance and adequately addressed in the contract document. Some examples might be useful:

- Public demand for a new type of service, such as recycling curbside pickup.
- An oil crisis which requires a contract price adjustment.
- The institution of a new holiday.
- A new public event which requires refuse service.

Although a good contract would foresee these possibilities it would require an arbitration mechanism to determine the exact contract adjustments required and the appropriate cost adjustments. In most jurisdictions laws have been enacted which deal with refuse handling. The contract monitoring function should be available to provide interpretation and/or enforcement of such regulations.

Contract Enforcement

I have now broached the subject of enforcement, a topic that bears some scrutiny. It would be impossible to insure that all provisions of a solid waste contract, regardless of the type, would

be carried out unless an enforcement mechanism, of some sort, was in place. The only alternative would be to declare one or both parties in **default** and terminate the contract. Default is a costly and time consuming procedure which I hope no one experiences. Short of this the contract should designate specific penalties to be applied in cases where contract terms are not met. **Penalties** should apply to the contractor for not delivering service as well as to the contracting party for not meeting their responsibilities under the contract. Repeated failure to comply with contract terms should result in default. Penalty and default terminology should be clearly spelled out in the contract document. Again, applicable legal structure will guide the public entity in their individual handling of penalties and default.

Liability Issues

Part of the contract monitoring function, which can clearly become a separate legal issue, relates to **liability** for the contractors' actions. Liability may be one of the most serious single issues related to the contracting process. Let me give a worst case example, a contractor's truck runs over a private car and kills the occupant. Who has liability and in what amount? Liability issues can be so costly that they require a full understanding before the contract should be entered into. In some jurisdictions the contractor might have sole liability, in others the contracting entity might bear all, or a portion, and in other cases the contract language might be the determining factor. Certainly this area should be carefully explored prior to entering into a contract, and in cases where contract interpretation is an issue, the contract monitoring function must be involved in interpretation of the relevant language for the protection of the public entity. Now that I have explored conceptual issues involved in the monitoring of a contract, lets explore the establishment of such an agency.

Establishing a Contract Monitoring Agency

From an institutional perspective there are numerous ways to establish a contract monitoring unit. Legal dictates affecting contract monitoring alternatives vary from one jurisdiction to another, however contract monitoring functions may usually be set up in any of the following ways:

- Invite private sector firms to perform the contract monitoring function to a private agency;
- Assign the task to an existing public agency; or
- Establish a separate agency, within the public entity responsible for the service, to carry out the function.

In some jurisdictions the existing legal framework precludes transferring the responsibility to the private sector and dictates which option is used. In others, a choice might be available. Whichever the case may be, the cost of the contract monitoring function must be added to the contracting cost in order to determine what actual cost savings privatization brings about.

Staffing

A second question we might ask is "what should a contract monitoring agency, in the case of a solid waste contract, look like?" Clearly any organization must have an agency head, whatever we might call the person. It might be argued that this person should be an attorney with a background in contract law it might also be argued that this person should be a solid waste professional with contract experience, or even a general contract agent with no specific solid waste experience. At this point I would like to digress a minute and put to rest a myth that has existed beyond its time. The solid waste management profession in many industrialized nations has gone far beyond the old stereotype of putting garbage into a truck, hauling it off and dumping it into a hole in the ground. Legal constraints, environmental issues and technology have taken the profession well beyond those days. Although this may not be the case yet in Czechoslovakia, the fact that we are here today indicates that Czechoslovakia is moving in the same direction. I would argue that anyone managing a solid waste function is required to be aware of, if not knowledgeable about the new environmental, financial, legal and technical issues affecting waste management.

Any contract monitoring agency requires sound legal guidance in order function effectively. This could be accomplished by hiring on staff legal counsel, contracting for the function or using existing public legal counsel. The choice made here should largely depend on the size of the contract or contracts, and the willingness to wait for legal information. If large contracts are involved and considerable amounts of money are at stake, I would argue that having a contract attorney on staff would be the preferred alternative. This might sound like an expense that is not required if you are trying to save money via privatization. However, remember the contractor will also have retained legal counsel or have a staff attorney, and all or part of this person's costs will be included in the contractor's bid.

Staff must be provided to physically monitor the contractor's performance in the field and to resolve disputes between the contractor and the direct recipient of the service. Monitors must be intimately familiar with the contract and the public entity's laws regarding the contracted function. They should be skilled at negotiations and should have a clear understanding of their role in terms of where their function starts and where it ends. Their ability to solve problems or pass them to higher management, and/or the legal staff, will be critical to the success of the contract monitoring function as seen by service recipients, the public entity and the contractor.

Financial audit staff should be available to the contract monitoring function. Should an issue arise where a contract cost adjustment is in order a competent financial staff should be available to determine whether the cost adjustment is fair to the contractor and to the public entity. Clearly it is better if this staff where contracted, on an on-call basis, from a firm which is neutral to both parties.

Finally a certain amount of clerical staff will be required. This staff's size will be dictated by contract requirements regarding reporting functions and management and field staff's needs.

Conclusion

I hope I have provided useful insights into the contract monitoring function. Let me summarize by highlighting some key points:

- Effective contract monitoring begins with a good contract which clearly defines the required service level.
- Legal review of the contract and the penalty/default criteria are critical.
- Contract monitoring functions can be carried out in a number of ways decisions based on the type of contract, the size of the contract and legal considerations will govern your function's structure.
- Some arbitration mechanism is critical to success of the contract and to ensure flexibility in mutually beneficial contract changes.

PRESENTATION NO. 5

"ASSESSING THE FINANCIAL COSTS OF PUBLIC SERVICES"

ASSESSING THE FINANCIAL COSTS OF A PUBLIC SERVICE OPERATION

To answer questions regarding the costs of privatization or contracting, it is essential that a municipality have a clearly defined goal, or goals, in mind. A municipality may want to limit the cost of a certain service, or conversely it may hope to stimulate private sector growth. Given different goals, different decision levels come into force and likely will change some of our thinking regarding overall costs. In the case of contracting to stimulate private sector growth a much broader cost assessment comes into play and one must look at the overall cost benefit ratio gained over the larger community system. If on the other hand, a municipality is interested in minimizing the cost of providing a certain service then we are faced with a simpler cost benefit ratio analysis.

In any cost analysis we perform however, it is absolutely essential that we answer the question " what is the ***baseline cost*** to the municipality of providing the given service? " As my area of expertise is solid waste I will use a solid waste collection operation as a model for developing a cost analysis. It should be clear that this same technique can be applied to any service or function considered for contracting. I will make an assumption, at this point, that I think is very important. That assumption is: we are determining the cost of the service we are currently providing and that is the same service we are contracting. It is difficult, if not impossible to determine what financial cost comparisons are if a municipality tries to set a different ***service level***, than it currently utilizes, as the result of a contracting process.

Costs related to providing a service can be broken into two basic categories often referred to as ***direct*** and ***indirect***. Before going into any detail as to how we might identify various costs it would be useful to understand our definition of these two cost factors and why we use them. In Phoenix our overriding goal in the contracting is to achieve the lowest possible cost for providing a given service to the public. In the case of our solid waste collection function this translates into minimizing the fee we charge each homeowner for a specified list of services rendered and billed on a monthly basis.

- ***direct costs***, sometimes referred to as "go-away" costs, are items directly related to providing a service, such as: trucks, drivers, containers, first line supervisors etc.

- ***indirect costs*** are items which are not directly related to providing the service and will not "go away" if the function is contracted. Examples of non-go away costs are the city manager, the city personnel department and any other entity that supports several activities including the function that is being reviewed for contracting.

Current Costs

In Phoenix we have developed a very sophisticated Financial Management Information System (FMIS). This system is based on normal municipal accounting practices and allows a manager to identify any costs in their operation with relative ease. Most other cities I have dealt with are not as fortunate and a manager has a difficult if not impossible time in attempting to determine what the actual costs of running a given operation are. With this in mind I will give you an overview of what we look at in terms of direct costs as related to our solid waste collection operation:

Personnel Costs

Generally one of the most expensive components of an operation is the personnel component. It is relatively easy to determine what can be saved by contracting if we assume that the full cost of the personnel involved in the collection function will "go-away" if we contract the service. We can see that any salaries or wages will not have to be paid, any fringe benefits such as insurance will not have to be budgeted, and the requirement to provide pensions for these personnel will decrease.

It is more difficult to determine what indirect personnel costs will stay, or go-away, through contracting. If, for example, the city has a payroll department consisting of 35 people and three of them are fully dedicated to processing payroll for the function to be contracted, then those three people should be included as an indirect cost savings attributed to the contracting process. The city manager however will not go-away as a result of the contracting process and therefore none of his costs should be attributable to the actual cost of providing the service. In a complete cost assessment the important action required to determine personnel-related costs is to identify the direct go-away costs and then review every support function to determine if there exists a real possibility for cost savings in the support areas. If a person will remain in public administration after a function is contracted then no costs savings should be attributed to that person or any portion of the person's organizational costs.

Commodities

Commodities are an important cost when considering a service or function for private participation as they consist of things required to keep an operation running from day to day. Examples include desks, chairs, paper, pencils, uniforms, gasoline, etc. As an organization is scaled down through the contracting process there should be a corresponding savings on expenditures for items of this nature. Again, it will be relatively easy to determine how much savings are attributable to direct cost areas. It will be more difficult to determine the cost savings related to those areas which are indirect cost areas.

Services

A third area of concern is an area referred to as services. This area includes maintenance costs of equipment, electricity, water, telephones etc. As an organization scales back due to the contracting process a significant reduction should be experienced in the demand for services. In the case of a solid waste collection operation, equipment maintenance costs run a very close second to personnel related costs. It is very important to assess each of the areas that provide support to the contracted function in an effort to determine the actual costs.

Capital Items

A fourth key area of cost is related to expenditures for capital items. Phoenix arbitrarily sets a dollar limit and identifies items that costs more than that limit as capital items. In many solid waste operations, equipment represents the greatest capital cost. Other items are buildings, computer hardware, containers etc. In many cases the acquisition of capital items might be financed and interest must be paid on the principal. If, for example, I purchase two million dollars worth of new trucks on a lease purchase arrangement then the city will pay interest on that money. Interest payments are then a go-away cost if we contract the operation and I have no need for the new vehicles.

The direct and indirect cost savings explored above represent the items that we can reasonably identify in an annual budget. However they should not represent the only sources of capital cost savings. Contracting might very well allow for a cost avoidance for future capital purchases. If we know that we will require a new building to house the waste collection operation in the near future, a significant cost avoidance can be realized by contracting to the private sector. As we perform a cost analysis we should also look throughout the organization for significant cost avoidance possibilities and enter that data into our financial decision model.

Costs Resulting from Private Participation

Thus far I have talked about all the cost areas where potential financial savings exist in the framework of a contracting or privatization process. As a point of fact, contracting also has the potential to *add* new costs to a municipal system. We should take the time to determine what near and long-term costs the contracting process brings about.

Preparation Costs

Initially an organization must consider the fact that a significant number of hours will be spent by staff to determine financial aspects of the process, draft contracts, prepare bid packets, review bids, answer questions, etc. These hours should be incorporated into the contract cost as part of the price of the contracting process. Additionally as contracts are renewed and/or re-bid there are costs associated with these processes.

Contract Monitoring Costs

If a contract is in fact tendered then the contract must be monitored. A municipal government may either contract the monitoring function or hire staff to perform the function. In either case there will be costs associated with contract monitoring. This cost must be recognized and added to the price that the contractor expects for performing the service.

Direct Disbursements to the Contractor(s)

Contractors must be paid. Changes and additions to your disbursement procedures must be reviewed and if new personnel and/or procedures are required which increase time then this cost must be added to the price of the process.

Public Relations Costs

If in a particular case transfering services to private provision is not a universally popular initiative, it may be wise to allocate funds to a public relations campaign to insure that the public understands what is being done, why and how. The cost of such an effort must be added to the cost of contracting.

Other Costs

There are some minor additional costs that should be considered when reviewing the costs of contracting. Since these costs may be unique to a given situation I will only mention them. If a city is forced to lay off some of its employees as a result of the contracting process there may be some unique severance pay and/or outplacement costs related to the process. These should certainly be considered as part of the cost of contracting. If the municipality is unionized then there may be costs associated with dealing with the unions in order to implement the contracting process. These costs should also be considered as part of the cost of privatization.

At this point I would like to terminate my immediate discussion on costs associated with the contracting process and the identification of baseline costs, and turn to the subject of paying the contractor.

Payment to a Contractor

There are two basic methods I am familiar with for paying a contractor. Both mechanisms assume that the statutes require that the service be accepted from (by?) the municipal entity. The two options are:

- to pay for the contract out of *general tax revenues,*
- to *charge a fee* to cover the cost of the contracting process.

If a municipality elects to allow private companies to compete to provide the service in an open market or develops a franchise scenario, then the two options mentioned earlier are not considerations.

Paying the contractor out of general tax revenues is certainly an easy option. It allows for relatively simple accounting processes and requires no additional special facilities for collection of funds. On the other hand, the establishment of a fee based system allows for relatively concise charges to be applied for individual service levels received. It also allows fees to be more easily and readily adjusted as contract prices are increased or service levels are changed. On the negative side a fee based system requires that a collection methodology be developed or that the fee be added to an existing bill such as the water bill. Billing separately or billing as part of another service bill sometimes results in organizations or residents not paying the portion of the bill related to the particular service in question.

Reducing the Cost of Contracting Out

Another interesting area for discussion is the topic of reducing the cost of contracting through various mechanisms:

- One example is reducing contract costs initially by *allowing the contractor to take over capital assets* such as land, buildings, computer equipment, trucks etc., to reduce the financial risk to the contractor and minimize his initial investment. This type of strategy should result in a significant reduction in near term contracting costs.

- Another example is to *facilitate the hire of former municipal employees* in the contractor's work force. This should save training costs and be passed on to the municipality in the form of reduced contract payments.

- A municipality might *investigate tax advantages and waive certain zoning and other legal constraints* for contractors in an effort to minimize contract costs. Financial incentives for contractors can best be investigated in a contract pre-bid meeting during which contractors might be asked to outline incentives they would like to see which would cause them to be able to reduce contract costs.

Conclusion

There are numerouse issues related to the financial implications of contracting public services to the private sector. In summary I would hope that several issues have been discussed in enough detail to allow you to think about their importance in any ventures that you will undertake.

- Know the current costs to provide a service. They are paramount in determining whether you will save money by contracting.
- Avoid drastic alterations to service levels as part of the contracting process.
- Be creative while looking for ways to reduce your contract costs.
- Deal with reputable companies which have the financial strength to perform the contract.
- Listen to the contractors and attempt to respond to real concerns about the contract document and their costs.
- Develop a ***public/private partnership*** with a contractor, not an adversarial relationship.

PRESENTATION NO. 6

"ASSESSING OPERATIONAL EFFICIENCY OF PUBLIC SERVICES"

ASSESSING OPERATIONAL EFFICIENCY IN MUNICIPAL SERVICES

Introduction

About twenty-five years ago, the city of Phoenix, Arizona, municipal management anticipated significant revenue shortfalls due to a projected economic downturn in the coming years. Compounding the problem was a growing public resistance to any tax increases.

After carefully evaluating the available options, it was decided to create an Operations Analysis Section in the Management and Budget Department. This Section was assigned the task to improve municipal systems and procedures to reduce operating costs at all levels of government.

The report on "Privatization of Solid Waste Management Services in Czechoslovakia", prepared by Price Waterhouse in April 1992, describes the innovative cost cutting ways through privatization of municipal services by the cities of Ceske Tecin, Banska Bystrica, Zilina, Trnava and Karlovy Vary. Privatization of services has been proven to be the fastest way for a municipality to cut operating costs.

Twenty-five years ago, the concept of privatizing governmental services was not considered to be a universally acceptable solution in the United States. At that time the only viable alternative for a municipality to prepare for lean financial years was to increase the productivity of its employees and/or prioritize services to be cut. The city of Phoenix decided to increase productivity rather than cut services provided to the public.

The following is a description of how the Phoenix Operations Analysis Section used industrial engineering techniques to improve systems and procedures and reduce costs in the Solid Waste Management Department. This involved the development of the Perfomance Analysis and Realization Program. Its basic elements are:

- Work Description
- Process Analysis
- Time Measurement
- Methods Improvement
- Performance Control

The Approach

Prior to the start of the performance analysis and realization program in the Solid Waste Management Department, two meetings were held. The first one included top management and field supervisors. At this meeting it was explained that the program was designed to assist managers and supervisors to achieve greater productivity in their respective areas of responsibility by providing the first line supervisors with the necessary training in effective supervisory techniques, work standards and performance control system.

The second meeting, which was held in each of the four Districts, was primarily designed to prevent the rumor mill from cranking out any false information which could have a serious negative impact on the program. This meeting was attended by all workers in the field operations sections. The workers were assured that nobody would loose employment by the city, although some may be retrained and transferred to other positions within the city. Any cost savings would be achieved by eliminating vacant and temporary positions.

Work Description

The first step in the performance analysis is the preparation of the Work Distribution Chart. The purpose of the Work Distribution Chart is to identify and describe the work processes and the approximate time each person or group of persons spends on them. It provides the analyst with the basic information for subsequent analytical and time measurement work.

The Work Distribution Chart may provide information that could lead to significant methods improvements.

Process Analysis

The purpose of the process analysis is to describe the WHO, WHAT, WHERE, HOW, WHEN and WHY of the work performed. It takes each major process from the Work Distribution Chart and breaks it down into the step by step sequence of operations from beginning to end.

It is at this point that work is analyzed for the possibility of:

- Eliminating
- Simplifying
- Combining

A review of the Work Distribution Chart and Process Analysis Sheets of the Phoenix Solid Waste Management Department indicated that the

city could eliminate five radio dispatchers for a cost savings of over $ 65,000 per year. At that time the city had a Central Radio Dispatch office staffed by eight Radio Dispatchers and a Supervisor that received complaints from residents and relayed them to the appropriate field supervisor. Each of the four Districts had two clerical workers to perform clerical work such as personnel time cards, statistical reports etc. The review showed that elimination of the Central Radio Dispatch Office could be achieved by transferring one Radio Dispatcher to each of the four Districts and reclassifying the clerical workers and radio dispatcher to the position of Public Works Aide. This position in the District would be responsible for all clerical work and telephone and radio communication in that District.

Time Measurement

Each operation is broken down into timeable work elements. Time values are developed for each work element by conducting time studies.

Work standards are developed on the basis of the time values for each operation. The primary use of work standards is to establish a solid basis for operating controls which management can use to plan and direct its activities.

Work standards can be used to:

- provide operating controls
- establish operating objectives
- determine staffing requirements
- determine equipment requirements
- develop optimal production levels
- balance workloads
- evaluate performance

Provide Operating controls

Work standards provide management with the necessary information to control labor cost which is the largest portion of operating expenses. Areas of extreme high cost can be identified and corrective action taken.

Similar operations in different districts and sections can be compared for possible standardization.

Establish Operating Objectives

Any organization must have clear and well defined operating objectives to function efficiently. Work standards provide management with the basis for setting reasonable and sound goals concerning the efficient use of labor in accomplishing these objectives.

Determine Staffing Requirements

Labor costs are a significant portion of the total operating costs for any organization. It is important to be able to calculate the actual number of workers required to perform a given task.

Work standards allow the supervisor to accurately project the number of workers needed and efficiently plan the work to be accomplished.

Work standards provide a sound basis for scheduling work and supply the supervisor with the necessary controls for analyzing progress against this schedule.

Determine Equipment Requirements

Equipment is another major expense in solid waste collection activities. An automated sideloading solid waste collection truck costs more than $ 125,000 each. If an error of only 10% is made on a fleet of 110 trucks, it could cost a municipality over $ 1,250,000.

Work standards will provide the supervisor with the necessary information to accurately project the equipment requirement.

Develop Optimal Production Levels

Enforced idle time, when one worker must wait for another one to finish a task before the first one can proceed, must be reduced to an absolute minimum to increase operating efficiency.

Work standards provide the supervisor with the means to reduce or completely eliminate enforced idle time.

Balance Workloads

One of the most difficult tasks for a supervisor is to divide the work equally among the workers. An imbalance in workloads is often a source of friction among workers and their supervisor whom they hold responsible and frequently accuse of partiality.

Work standards provide supervisors with accurate information with which to balance the work. Equalization of the work load is one of the quickest ways of improving overall performance.

Evaluate Performance

Work standards provide the basis for making a sound comparison of individual workers, units or districts in the accomplishment of their daily work.

How well are the workers performing against the work standards ?

Is work being completed as scheduled ?

All of these questions and many more can be answered with proper analysis of the information provided through the use of work standards.

Application Of The Performance Analysis And Realization Program.

To measure and improve operational efficiency in municipal services, a systematic approach is used. For example, in the city of Phoenix Solid Waste Management Department we took the following steps.

Basic data collection

The foundation of an efficient solid waste collection system is the collection of basic data. This includes information on service units (single homes, multiple units, government facilities, commercial enterprises etc.) and their service location. Where containerized collection is provided, it also includes the number, size and on which side the containers are located.

Basic data is recorded on sectional maps of the city. It is important that the city maps are acurate and up-to-date.

Time studies

This is the time honored work measurement approach of industrial engineering, dating back to Frederick Taylor in the late 1800's. It appraises work in terms of time and relies upon direct observation of the work using a decimal stopwatch. A decimal stopwatch is used because it is much easier to add the individual times and minimizes the possibility of errors in arithmatic.

The procedure for conducting a time study may be briefly summarized as follows:

1. Preliminary analysis
2. Recording the standard practice
3. Recording the time value
4. Rating performance
5. Computation of standards

The full scope of the standard development responsibility is much

broader than that of merely observing and recording data. Of equal, or it could be argued greater, importance is the analysis and establishment of standard practices, the planning and preparation for the study, the proper approach to the study and the observer's conduct during each study. The responsibilities of an Operations Analyst conducting a time study with respect to the specific steps are as follows:

Preliminary analysis includes:

. Understanding the purpose of the operation and the desired results.

. Determination of whether the method in use may be subject to improvement.

. Determination of the best unit of production to measure output during the study such as mile, foot, container, dwelling unit etc.

. Planning the study so that the desired results will be easily and economically obtained.

. Definition of the standard upon which the study will be based (basic unit of measure most commonly derived and used) such as minute, hour or day.

Recording the standard practice includes:

. Recording all the significant information regarding the work under study and the conditions surrounding its performance during the study, including weather, traffic, type of street, type and number of equipment and tools.

. Observing the operation as performed and dividing the work into elements of work time,delay time or enforced idle time.

Recording time values includes:

. Recording the actual work time.

. Comparison of the worker's performance to a concept of standard for each element worked.

. Assignment of a percentage value (rating) to the workers's performance to be used in the adjustment of the observed times.

. Recording of the rating for each element on the forms.

Computation of standards includes:

. Recapping the time study, subtracting times if continuous timing was used, computation of averages and actual times.

. Application of pace ratings.

. Computation of the final standard.

Definition of Standard

A standard time indicates how long a given rate of work input must be maintained to produce a unit of output. Hence, time studies require the definition of a rate of work input (including methods, tools, quality and degree of exertion) and a unit of output (the work unit). The definition is as follows:

The time standard shall reflect the time which will be required by a qualified worker to complete a work element, using normal skill and expending normal effort,with normal conditions and surroundings during a regular shift,with the amount of personal, resting and delay times as provided in the allowance for the work.

Definition of Work Standard

The work performed by an employee is broken down into work elements. A value (time standard) has been calculated for each element. The sum total of these elements represent the Work Standard. This can be expressed in minutes or hours per shift.

The stopwatch

A good quality stopwatch is an important tool of the Operations Analyst during a time study. There are three types of stopwatches: the decimal minute, the decimal hour and the split-second. The decimal minute and the decimal hour stopwatches are the two types commonly used for time studies. The split-second stopwatch is familiar to most people because of its use in athletic events. It is considered the least desirable watch for time studies because it is necessary to convert seconds to hundredths of minutes which increases the possibility of clerical errors in calculating the standards.

Experience has proven the decimal stopwatch to be preferable for time studies. The face of the decimal stopwatch has a large dial divided into 100 equal spaces, each representing 1/100 of a minute with numerals at each 1/10 of a minute. The sweep hand makes one complete revolution of the dial in one minute. A smaller dial, superimposed on the face of the watch, is divided into 30 equal spaces each representing one minute with numerals at every three or

five minutes. The small hand makes one complete revolution of the dial in 30 minutes.

The watch is controlled by two mechanisms. A slide at the side of the watch is manipulated to start or stop the timing at any point. Depression of the stem winder causes both of the hands to simultaneously snap back to the starting point, either when the hands are in motion, or while their movement has been stopped.

Map measuring device

Another useful tool used by an Operations Analyst doing studies in the solid waste collection operation, is the map measuring device. This device is used to measure the distance between specific points on a map. In the United States, this device gives readings in inches. The device's face is divided into 12 equal spaces. Each space is divided into 8 equal spaces.

This device allows the Analyst to measure the distance between collection points on a map instead of having to go out in a vehicle and measure the distance with a footometer.

Aplication of the time standards

With the development of the time standards for each work element in solid waste collection, and the field data recorded for each city map section, it is now possible to calculate the workload for each one of those sectional maps.

The workload on each sectional map is summarized on the workload summary form. This form shows the sectional map identification numbers, the number and size of the containers, the distance of each collection block face, the distance between collection blocks, the loading or collection time, the route travel time, the total collection time, and the estimated weight for each sectional map. This represents the total collection time for a given city district. To this total must be added the Get Ready/Put Away Time, Non-Route Travel and Compaction and Landfill Time. To arrive at these values, a preliminary truck requirement must be projected on the basis of field operation experience, i.e. the average number of trips to the landfill per truck and the average haul capacity of the equipment.

The total estimated weight is divided by the number of collection days. This is divided by the truck's average haul capacity and the average number of trips to the landfill. This is the preliminary truck requirement. The values of the four additional work elements can now be calculated.

The additional work element units are multiplied by the time standard and added to the collection workload to arrive at the total district workload time.

Relief workers and standby equipment

It is now known how many trucks and operators must be fielded each day. Because not all operators may be available for work on any given day, it is necessary to allow a certain percentage, on the basis of experience, for relief personnel. It is also necessary to allow a certain percentage for standby equipment according to projected breakdown time.

Routing of solid waste collection vehicles

The next step is to route the collection vehicles as efficiently as possible. To do this, the city of Phoenix solid waste management staff uses the heuristic routing system. This is a routing system that was developed by the United States Environmental Protection Agency in 1974 to help reduce the waste management costs of the communities. The manual states "the heuristic approach to problem solving consists of applying human intelligence, experience, common sense and certain rules of thumb (or heuristics) to develop an acceptable, but not necessarily an optimum, solution to a problem".

Application of the heuristic routing principles to the Phoenix solid waste collection routes has resulted in significant cost savings by eliminating unnecessary deadheading of trucks.

Macro routing

Macro routing determines the assignment of daily collection routes to existing disposal sites. The objective is to minimize the haul time from the collection to the disposal sites.

Micro routing

Micro routing is the detailed lay out of individual collection routes. Each collection service area is studied to determine the path that the collection vehicle should follow as it collects from each service location on its route. The objective is to minimize the driving time on the collection route by eliminating unnecessary deadheading i.e. street segments that are traversed more than once.

Work standard

Each route consists of a route map and a work standard form. Each collection block face, this is the section of a public thoroughfare between one street and the next on the same side of the street, is numbered in collection sequence. Arrows on the map makes it easy for the truck operator to determine the direction of travel.

The work standard form shows the district, route number, date and

columns for block number, activity, containers, block feet, distance in block feet, the container loading minutes, the route travel minutes, the activity minutes, the total collection minutes and the estimated weight in pounds. Each column is totaled at the bottom of the form. The total collection minutes indicate the work standard i.e. the operator is expected to perform the work within that time.

Performance control

With the development of a work standard, it is possible to implement a performance control system. If the truck is equipped with a radio, the operator could be required to call in at regular intervals to report to the base station at which collection block number the truck is. If no radio is available, the field supervisor could observe at what time the truck is at a certain block number. The field supervisor would then know if the operator is on schedule, ahead of schedule or behind schedule.

At the end of each shift, the field supervisor, completes a route completion report to be submitted to the district superintendent. On the basis of the information contained in the daily route completion reports, the district superintendent prepares a weekly route completion report for the division head.

Assessing efficiency even when services have been privatized.

Why should a municipality take the trouble to assess efficiency after the services have been contracted out to a private company ?

Although services may have been contracted out, the city's residents will still hold the city management responsible for the actual performance and quality of services provided to them. The city should feel sure that the contractor can perform. The city should also develop a contingency plan in case a contractor fails to perform according to the contract. Because solid waste collection equipment can not be obtained on short notice in the quantity needed to continue service, city management would be wise to include a contract clause that allows the city to take over the contrator's equipment at fair market value.

Knowing approximately how much equipment and personnel is required to perform a specific service will allow city management to estimate what a reasonable cost would be. This knowledge could result in significant cost savings to the city.

OVERHEAD TRANSPARENCIES

1. WORK DISTRIBUTION CHART
2. PROCESS ANALYSIS CHART
3. WORK MEASUREMENT TOOLS
4. TIME STUDY COVER SHEET
5. TIME STUDY COUNT AND WORKLOAD SHEET
6. WORKLOAD SUMMARY
7. MACRO/MICRO ROUTING SAMPLES
8. HEURISTIC ROUTING SAMPLE 1.
9. HEURISTIC ROUTING SAMPLE 2.
10. HEURISTIC ROUTING SAMPLE 3.
11. HEURISTIC ROUTING SAMPLE 4
12. EQUIPMENT REQUIREMENT CALCULATION 1.
13. EQUIPMENT REQUIREMENT CALCULATION 2.
14. EQUIPMENT REQUIREMENT CALCULATION 3.
15. WORK STANDARD SHEET
16. DAILY ROUTE COMPLETION REPORT
17. WEEKLY ROUTE COMPLETION REPORT
18. TIME STANDARDS
19. COLLECTION TIME COMPARISON
20. ROUTE DETAIL PRINTOUT
21. DAILY CONTAINED COLLECTION PERFORMANCE REPORT
22. SECTIONAL MAP (house count)
23. ROUTE MAP

OVERHEAD TRANSPARENCIES

Name

Pos.

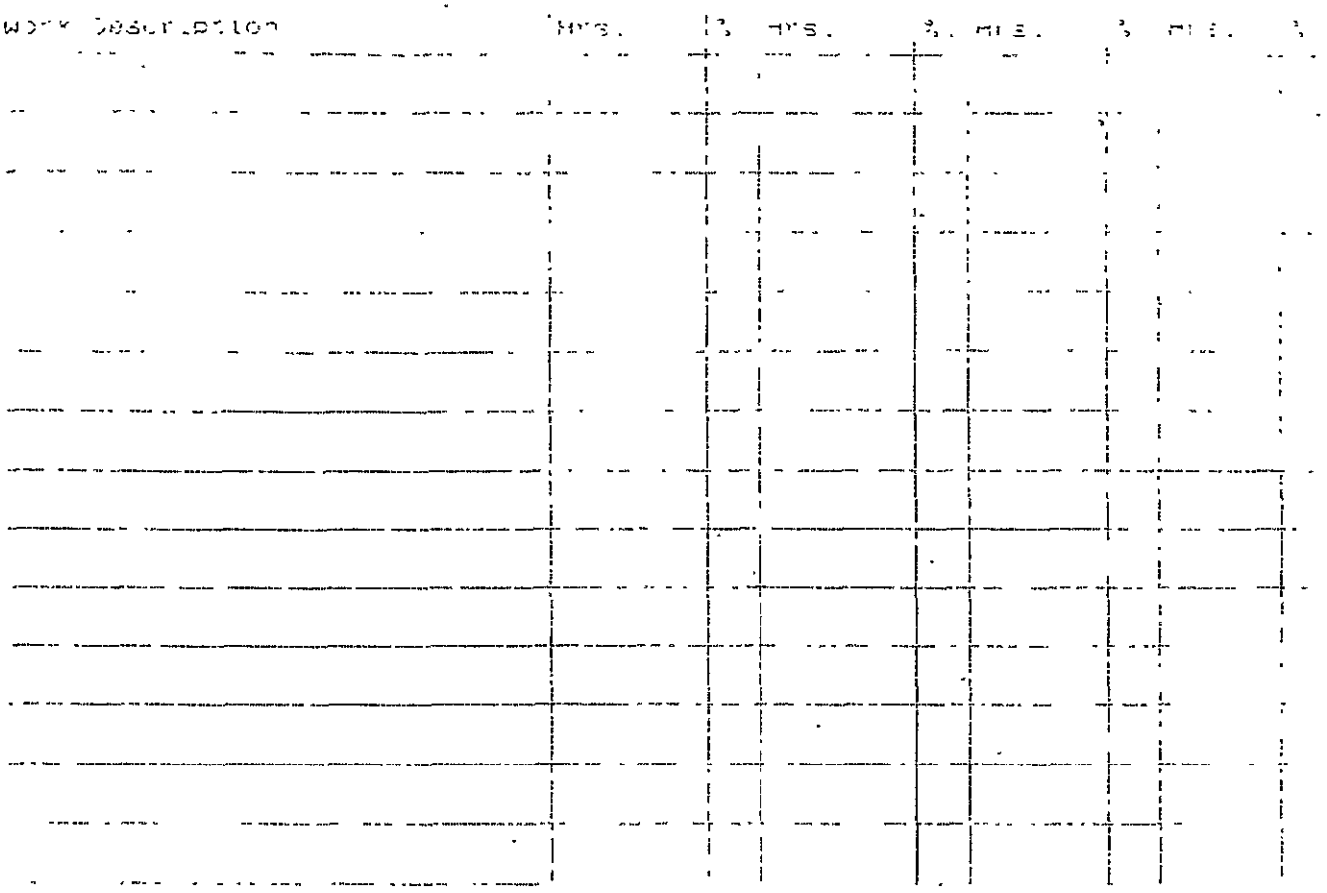


EXHIBIT 1

PROCESS ANALYSIS CHART
(Detail)

Department:	Unit:	Date:	By:

Work performed:

Details of method	Proces Flow	Dist. ft.	Quant.	Min.	Remarks

PROCESS ANALYSIS CHART
(Summary)

		Present		Proposed		Difference	
		No.	Time	No.	Time	No.	Time
	Operations						
	Transportations						
	Inspections						
	Delays						
	Storages						
Distance Travelled							

EXHIBIT 2

STOPWATCH

MAP MEASURING DEVICE

EXHIBIT 3

Collection vehicle equipment:

1. Crew composition: _____driver, _____ _____other, _____

2. Work assignment: _____Full day route, _____Test, _____Other, _____

3. Truck type: _____side-loader, _____front-loader

_____Other (describe) _____

4. Truck capacity: _____ cu.yd.

5. Fuel consumed during day: _____gal. (_____gasoline_____diesel)

6. route-no. _____color _____foreman _____collection day _____temp: ___ high temp: ___ low

Collection Route Information:

1. Frequency of collection: _____/wk. Hours: _____

2. Number of days since previous collection: _____

3. Collection point: _____curb _____alley _____other, explain _____

5. Odometer/time readings:

	First load odometer/time	second load odometer/time	third load odometer/time
• At yard (mornings)	____/____	XXXX/XXXX	XXXX/XXXX
• At beginning of load	____/____	____/____	____/____
• At end of load	____/____	____/____	____/____
• At disposal site	____/____	____/____	____/____
• At yard (evening)	____/____	____/____	____/____

• Cumulative time for
-dump (breakdown into wait/dump factors) _____/_____
• breaks: lunch _____ other _____

5. Net weight of each load:

First load _____tons;lbs estimated % full: _____

Second load _____tons;lbs estimated % full: _____

Third load _____tons;lbs estimated % full: _____

EXHIBIT 4

SOLID WASTE MANAGEMENT DEPARTMENT

(Workload)

District_____ Sect.Map No._____ By_____ Date_____

Block No.	Containers 90-gal.	300-gal.	Block Feet	Ft.Distance Betw.Blocks	Load Min.	Trav. Min.	Total Coll.Min.	Estimated Weignt lbs.

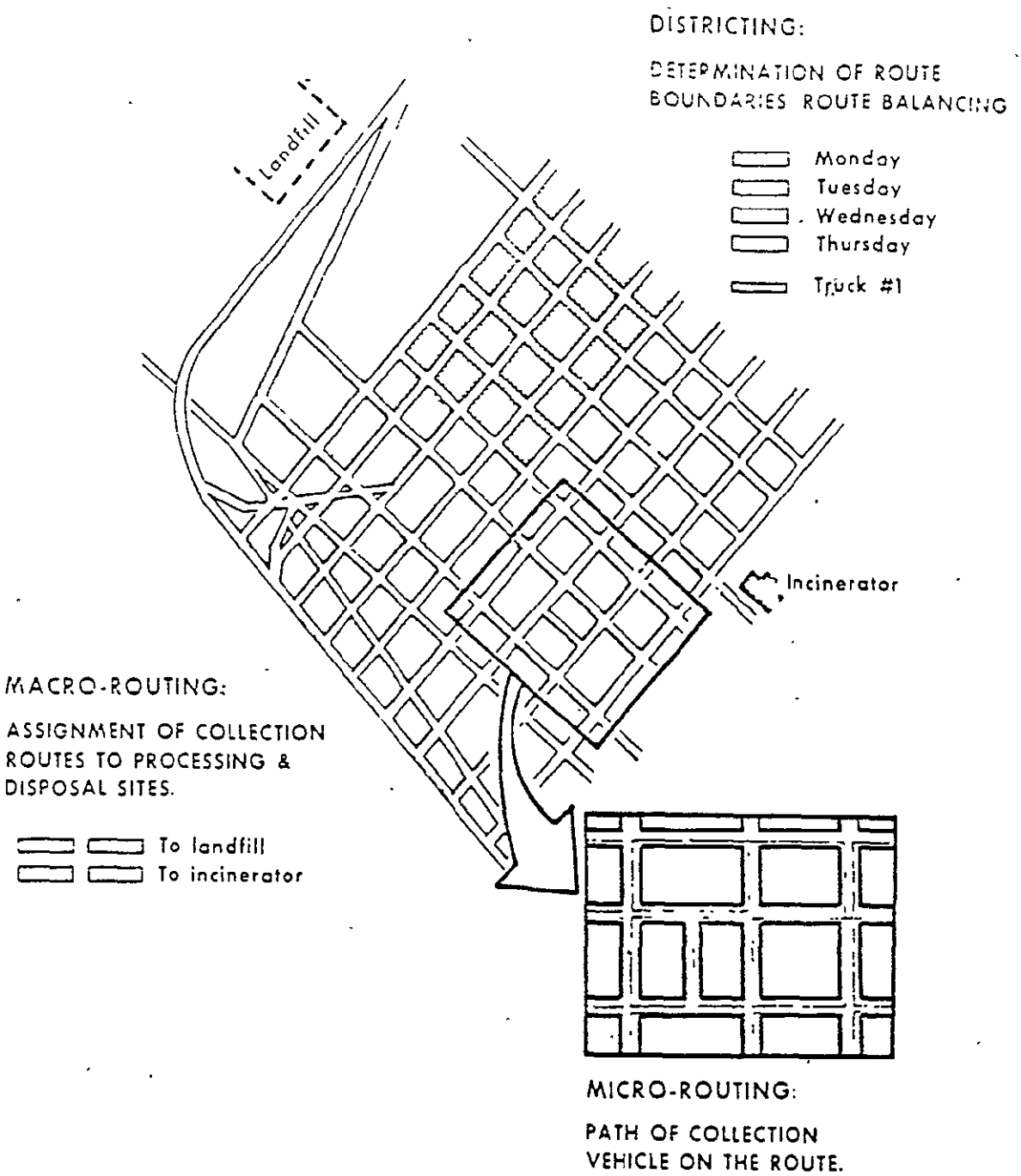
EXHIBIT 5

SOLID WASTE MANAGEMENT DEPARTMENT
(Workload Summary)

District_____ By_____ Date_____

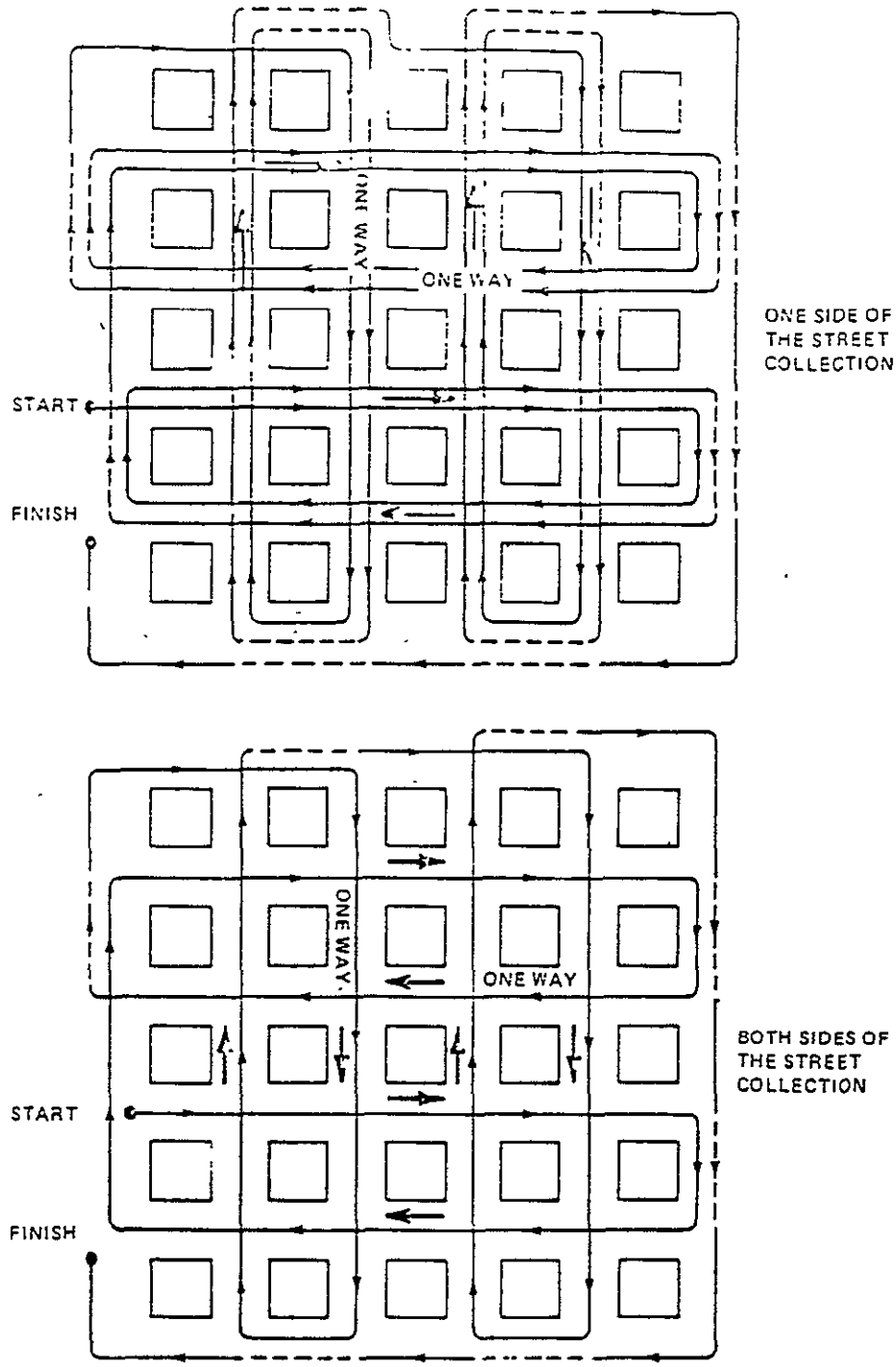
Sect. Map	Containers 90-gal.	300-gal.	Block Feet	Ft. Distance Betw. Blocks	Load Min.	Trav. Min.	Total Coll. Min.	Estimated Weight los.

EXHIBIT 6



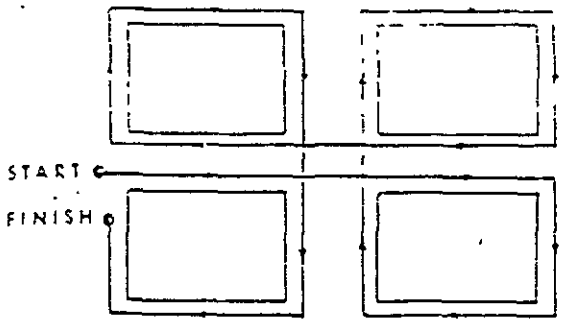
Types of routing: (1) macro-routing is assigning collection routes to processing and disposal sites, (2) districting is determining route boundaries and route balancing, (3) micro-routing is determining the path of collection vehicles on the route. The heuristic approach described in this report applies to micro-routing

EXHIBIT 7

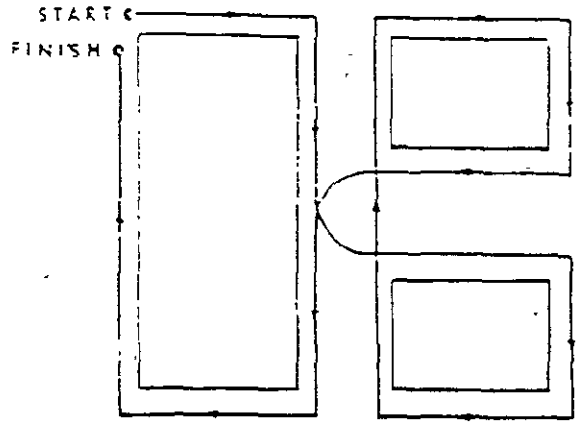


Specific routing patterns for multiple one-way streets Note the one-way streets are paired with a clockwise movement.

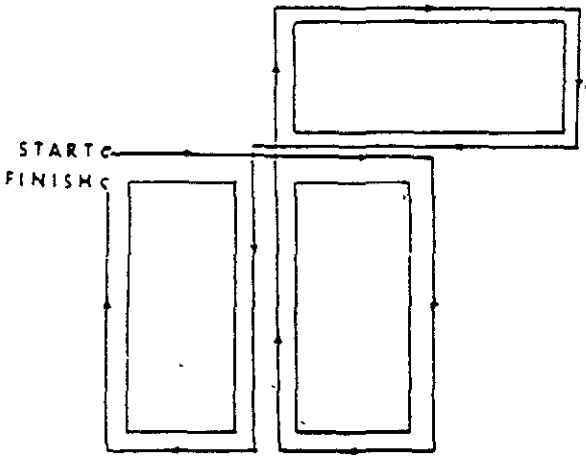
EXHIBIT 8



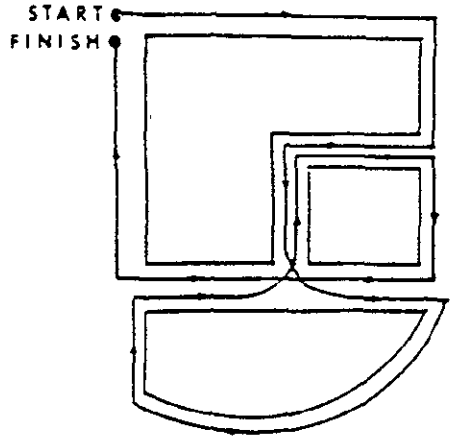
FOUR BLOCK CONFIGURATION APPLICABLE WHERE FOUR BLOCKS ARE POSITIONED AS SHOWN



THREE-BLOCK CONFIGURATION



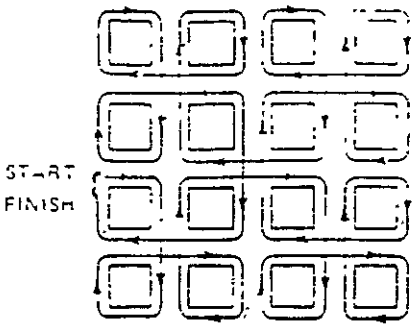
VARIATION OF THREE BLOCK CONFIGURATION



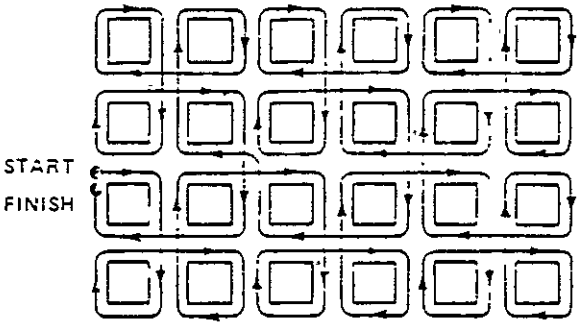
VARIATION OF THREE BLOCK CONFIGURATION

Some specific routing patterns for three- and four block configurations. In all configurations, blocks may vary in size and shape.

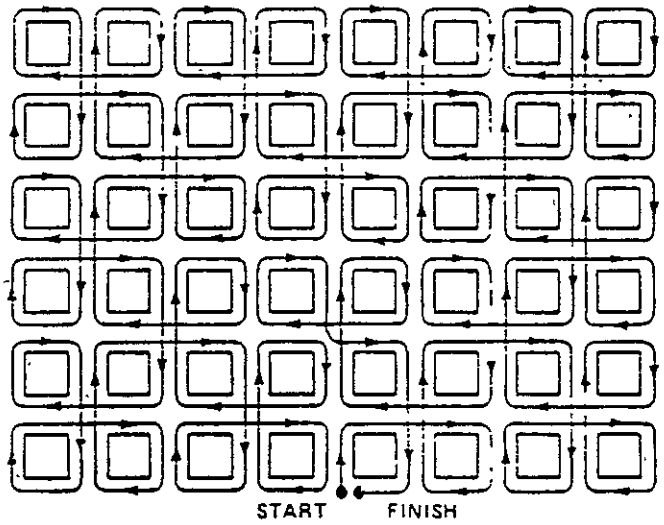
EXHIBIT 9



4x4 BLOCKS
NO LEFT TURNS
NO DEAD DISTANCE



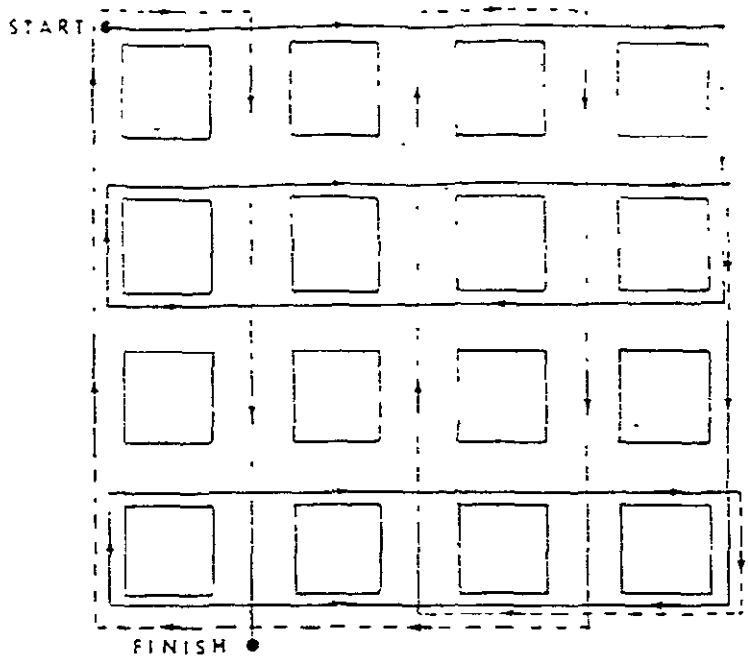
4x6 BLOCKS
ONE LEFT TURN
NO DEAD DISTANCE



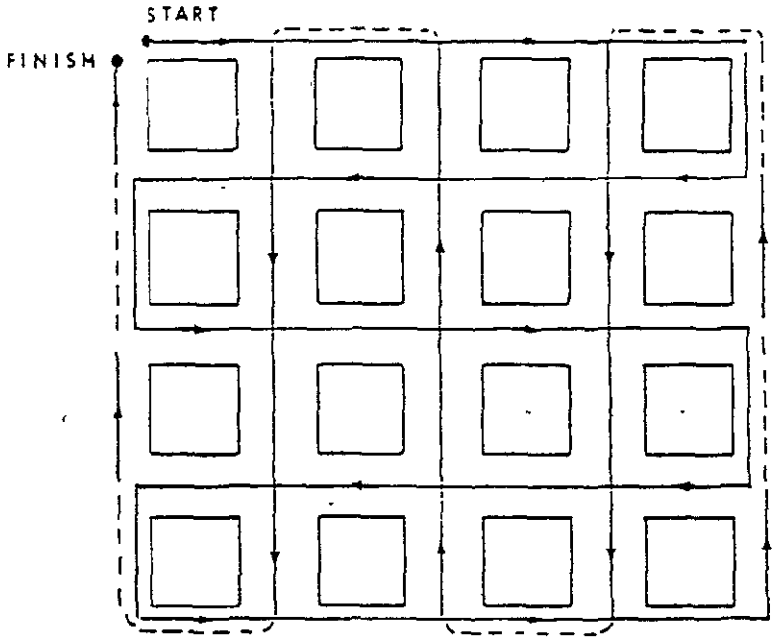
6x8 BLOCKS
ONE LEFT TURN
NO DEAD DISTANCE

Combinations of the four block pattern, one side-of-the street collection Note that each route is started midway on an evenly divided side of the grid, and uses the same routing pattern, with progression in a counter-clockwise fashion. For the larger grids, once the outside is routed the inside is routed in a clockwise progression

EXHIBIT 10



PATTERN A



PATTERN B

In specific routing patterns for both sides-of-the-street collection, pattern A entails no left turns, and pattern B requires nine left turns. Dash lines represent "dead distance" or non-collection segments of the route

EXHIBIT 11

Equipment Requirement Calculation

Total collection time	:	19,861 minutes
Total weight Mon-Tue	:	2,265,179 lbs.
Average distance to S.C.	:	5.76 ml.
Average distance to L.F.	:	11.31 ml.
Get ready/Put away time	:	?
Non-route travel time	:	?
Compaction time	:	?
Landfill time	:	?
Collection days	:	Monday-Tuesday and Thursday-Friday
Average number of trips to L.F.	:	2.5 trips
Average truck haul cap.	:	16,000 lbs.

a) Divide 2,265,179 lbs. by 2 collection days = 1,132,590 lbs./day

b) Divide 1,132,590 lbs. by 16,000 avge.haul cap. = 71 loads/day

c) Divide 71 loads by 2.5 trips per truck/day = 28.4 or 28 trucks.

EXHIBIT 12

Preliminary Truck Requirement Calculation

Get ready/Put away: 28 Operators x 10 min.	:	280 min.
Collection time: 19,861 min. / 2 days	:	9,930 min.
Non-route travel:		
28 trucks x 5.6 ml.(SC to Rte) x 1.75 min.	:	274 min.
28 trucks x 8.0 ml.(LF to SC) x 1.75 min.	:	392 min.
(71 loads x 2 - 28 loads) x 11.31 ml. (Rte to LF) x 1.75 min.	:	2,256 min.
Landfill time 71 loads x 15.5 min.	:	1,101 min.
Compaction time 71 loads x 15 min.	:	1,065 min.
Rest : 28 Operators x 30 min.	:	840 min.
Total Daily Workload	:	16,138 min.

If Operators work a 10-hour or 600 minute shift the preliminary truck requirement is:

16,138 min. / 600 min. = 26.9 trucks or 27 trucks.

EXHIBIT 13

Actual Truck Requirement

Get ready/Put away: 27 Operators x 10 min.	:	270 min.
Collection time 19,861 min. / 2 days	:	9,930 min.
Non-route travel:		
27 trucks x 5.6 ml.(SC to Rte) x 1.75 ml.	:	265 min.
27 trucks x 8.0 ml.(LF to SC) x 1.75 ml.	:	378 min.
(71 loads x 2 - 27 loads) x 11.31 ml. (Rte to LF) x 1.75 min.	:	2,276 min.
Landfill time 71 loads x 15.5 min.	:	1,101 min.
Compaction time 71 loads x 15.5 min.	:	1,065 min.
Rest: 27 Operators x 30 min.	:	810 min.
Total Daily Workload	:	16,095 min.

The actual truck requirement is 16,095 min. / 600 min. = 26.8 or 27 trucks

Time available to absorb population growth is

(27 Operators x 600 min.) - 16,095 min. = 102 min.

EXHIBIT 14

SOLID WASTE MANAGEMENT DEPARTMENT
(Work Standard)

District_____ Route No_____ Date_____

Block No.	Act.	Containers 90 g.	300 g.	Block Feet	Ft. Distance Betw. Blocks	Load Min.	Trav. Min.	Act. Min.	Total Col. Min.	Estimated Weight lb

EXHIBIT 15

Route Completion Times

District:	Route No:	Equip.Type:	Size:

Date	Start Shift	End Shift	Sch.Hrs.	Act.Hrs.	%	Weight

EXHIBIT 16

Weekly Route Completion Report

District	Week ending

Route No.	Equip.Type	Size	Sched.Hrs.	Actual Hrs.	%	Weight

EXHIBIT 17

CITY OF PHOENIX
SOLID WASTE MANAGEMENT DIVISION
SOLID WASTE COLLECTION TIME STANDARDS
(in minutes)

Work Element	Curbside Rearloader	Mechanized Sideloader
Get ready/Put away	15.000	15.000
Non-route travel to route p. km.	1.306	1.306
Non-route travel to landfill p. km.	1.306	1.306
Non-route travel from landfill p.km.	1.306	1.306
Route travel p. meter	.004	.004
Returnable container p. container	.173	--
Non-returnable container p.container	.098	--
90-gallon container p. container	--	.167
300-gallon container p. container	--	.158
Landfill p. occurrence	9.200	9.200

Note: The Phoenix curbside rearloader system has been replaced by the mechanized collection system.

EXHIBIT 18

City of La Paz
Solid Waste Collection Systems
Collection Time Comparison

Containers	Size Gal.	Units	Use. Vol.	Parada Prefec	Parada Rearl 1	Semi Curb Rearl 2	Roll On
Returnable	7.5	120	900	17.04	16.80	16.68	--
Non-Return.	7.5	120	900	13.80	13.56	11.88	--
Roll On	900	1	900	--	--	--	.65
Time in Min.	--	--	--	30.84	30.36	28.56	.65

City of Phoenix
Solid Waste Collection Systems
Collection Time Comparison

Containers	Size Gal.	Units	Use. Vol.	Curb Rearl 3	Mech Curb Sidel.	Mech Alley Sidel.
*Returnable	30	30	900	5.19	--	--
*Non-Return.	30	30	900	2.94	--	--
Mech.Curb.	90	10	900	--	1.67	--
Mech.Alley	300	3	900	--	-	.50
Time in Min.	--	--	--	7.13	1.67	.50

* Discontinued system

EXHIBIT 19

SANITATION DIVISION
CONTAINED COLLECTION ROUTE WORKSHEET
CENTRAL EAST DISTRICT

ROUTE 22-31 DATE: 11-2-87

SECTION NUMBER	BLOCK NUMBER	90 GL CTNRS	300 GL CTNRS	RT. TRVL DISTNCE	NON-RT TRV DI	LOAD MNTS	RT. TRV. MNTS.	NON-RTE TRV. MNT	MISC MNTS	TOTAL MNTS	CUMLTV MNTS	ESTIM WEIGHT	CUMLTV WEIGHT
	GR					0.00	0.00	0.00	15	15.00	15.00	0	0
	SC/RT				8.00	0.00	0.00	20.00		20.00	35.00	0	0
22-31	1		8	12.75		1.60	1.42	0.00		3.01	38.01	374	374
	2		5	15.00		1.00	1.67	0.00		2.66	40.68	609	1,583
	3		3	7.50		0.60	0.83	0.00		1.43	42.11	365	1,949
22-32	4		3	6.00		0.60	0.67	0.00		1.27	43.37	365	2,314
	5		3	7.50		0.60	0.83	0.00		1.43	44.81	365	2,680
22-31	6		3	6.00		0.60	0.67	0.00		1.27	46.07	365	3,045
	7		3	24.00		0.60	2.66	0.00		3.26	49.34	365	3,410
22-32	8		3	12.75		0.60	1.42	0.00		2.01	51.35	365	3,776
	9		4	8.25		0.80	0.92	0.00		1.71	53.07	487	4,263
	10		2	11.25		0.40	1.25	0.00		1.65	54.71	244	4,507
	11		7	24.00		1.40	2.66	0.00		4.06	58.78	853	5,359
	12		1	15.00		0.20	1.67	0.00		1.86	60.64	122	5,481
	13		3	15.75		0.60	1.75	0.00		2.35	62.99	365	5,846
	14		2	13.50		0.40	1.50	0.00		1.90	64.89	244	6,090
	15		10	16.50		2.00	1.83	0.00		3.83	68.72	1,218	7,308
	16		5	24.00		1.00	2.66	0.00		3.66	72.38	609	7,917
	17		8	24.00		1.60	2.66	0.00		4.26	76.64	974	8,891
	18		4	27.00		0.80	3.00	0.00		3.80	80.44	487	9,379
	19		9	27.00		1.80	3.00	0.00		4.80	85.23	1,096	10,475
23-31	20		5	57.00		1.00	6.33	0.00		7.33	92.56	609	11,084
	CHANGE					0.00	0.00	0.00	1	1.00	93.56	0	11,084
	21	21		39.00		4.60	4.33	0.00		8.93	102.49	1,025	12,109
	22	6		10.50		1.31	1.17	0.00		2.48	104.97	293	12,401
	23	14		23.25		3.07	2.58	0.00		5.65	110.61	683	13,085
	24	13		30.00		2.85	3.33	0.00		6.18	116.79	634	13,719
	25	8		10.50		1.75	1.17	0.00		2.92	119.71	390	14,109
	26	10		36.00		2.19	4.00	0.00		6.19	125.89	488	14,597
	27	2		12.00		0.44	1.33	0.00		1.77	127.66	98	14,695
	28	6		15.00		1.31	1.67	0.00		2.98	130.64	293	14,988
	29	6		15.75		1.31	1.75	0.00		3.06	133.71	293	15,281
	30	8		21.75		1.75	2.41	0.00		4.17	137.87	390	15,671
	31	2		9.00		0.44	1.00	0.00		1.44	139.31	98	15,769
	32	3		27.00		0.66	3.00	0.00		3.65	142.36	146	15,915
23-32	33	6		25.50		1.31	2.83	0.00		4.14	147.11	293	16,208
23-32	34	3		6.75		0.66	0.75	0.00		1.41	148.51	146	16,354
	35	16		33.00		3.50	3.66	0.00		7.17	155.68	781	17,135
	36	7		24.00		1.53	2.66	0.00		4.20	159.88	342	17,477
22-32	37	1		15.75		0.22	1.75	0.00		1.97	161.84	49	17,525
	38	9		19.50		1.97	2.16	0.00		4.14	165.98	439	17,965
	39	29		19.50		6.35	2.16	0.00		8.52	174.50	1,415	19,380
	RT/LF				12.00	0.00	0.00	30.00		30.00	204.50	0	19,380
	DUMP					0.00	0.00	0.00	13	13.00	217.50	0	19,380
	LF/RT				12.00	0.00	0.00	30.00		30.00	247.50	0	19,380
	40	13		30.75		2.85	3.41	0.00		6.26	253.76	634	20,014
	41	28		24.75		6.13	2.75	0.00		8.88	262.63	1,366	21,381

EXHIBIT 20

EXHIBIT 21

** FOREMAN: SOLO, J									
101B	PRIETO, I	0620	05:30	13470 09:54	14730 11:10	13650 13:55	0	40410	13737
102B	FIGUEROA, R	5237	05:30	13740 08:18	14580 11:05	14740 15:07	0	40980	14062
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
106B	REYNOLDS, [illegible]	5427	05:30	13470 08:44	13550 11:32	13640 14:41	0	40660	13553
107B	JEFFERSON, L	0621	05:30	0	0	0	0	0	0
107B	THOMAS, D		05:30	13950 11:27	9860 14:40	8680 15:21	0	32490	10830
** Subtotal **								453360	94698
** FOREMAN: SOLO, F									
101A	RAMIREZ, L	5239	05:30	13350 08:22	14590 11:09	14500 15:03	0	42440	14146
102A	WALKER, W	5223	05:30	14060 07:55	14780 10:06	14300 12:27	12480 15:33	55620	13905
103A	MARTINEZ, [illegible] R	[illegible]	[illegible]	[illegible] 07:38	13740 09:47	12140 13:19	12800 14:40	[illegible]	[illegible]

BEST
AVAILABLE

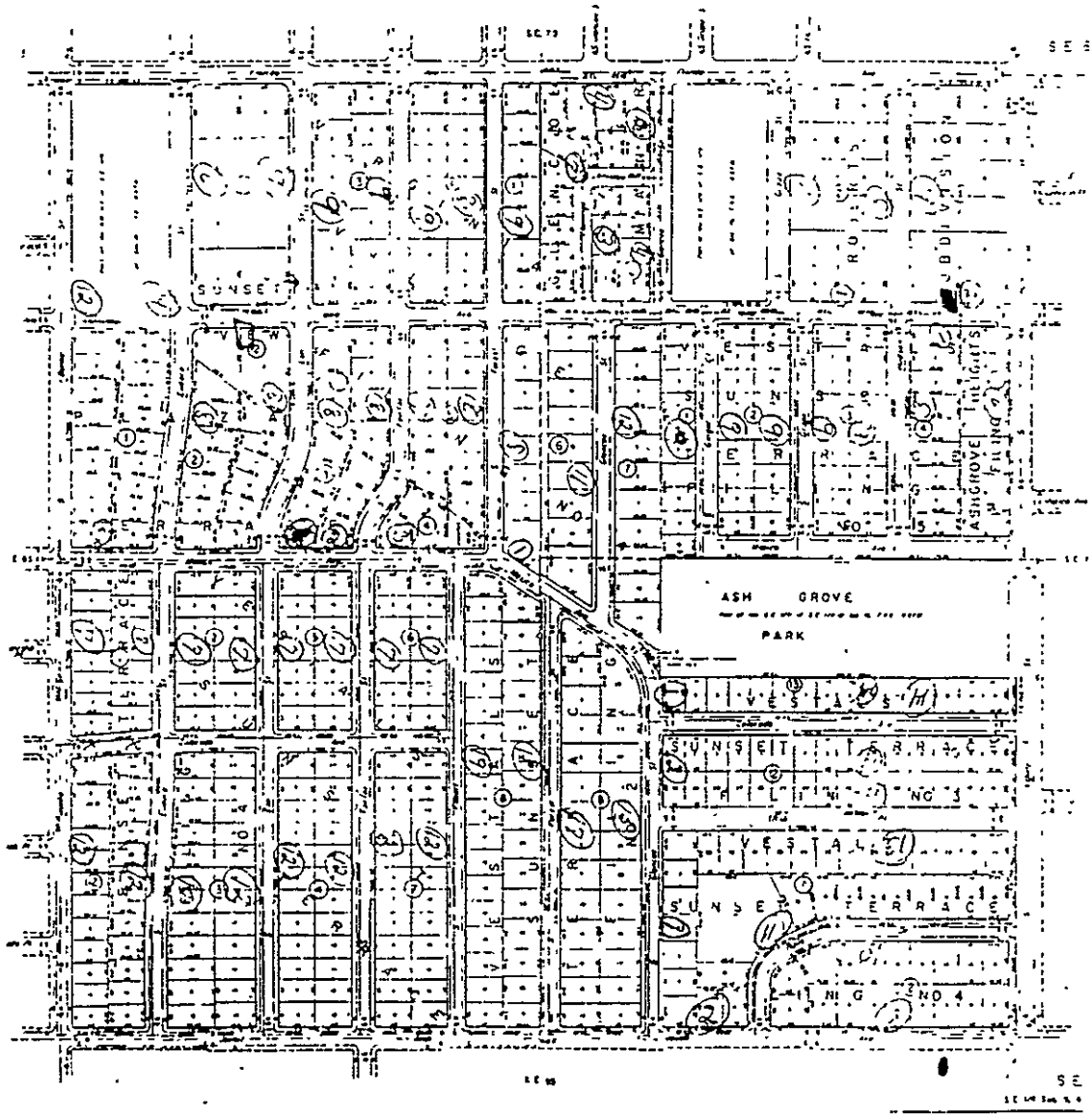


EXHIBIT 22

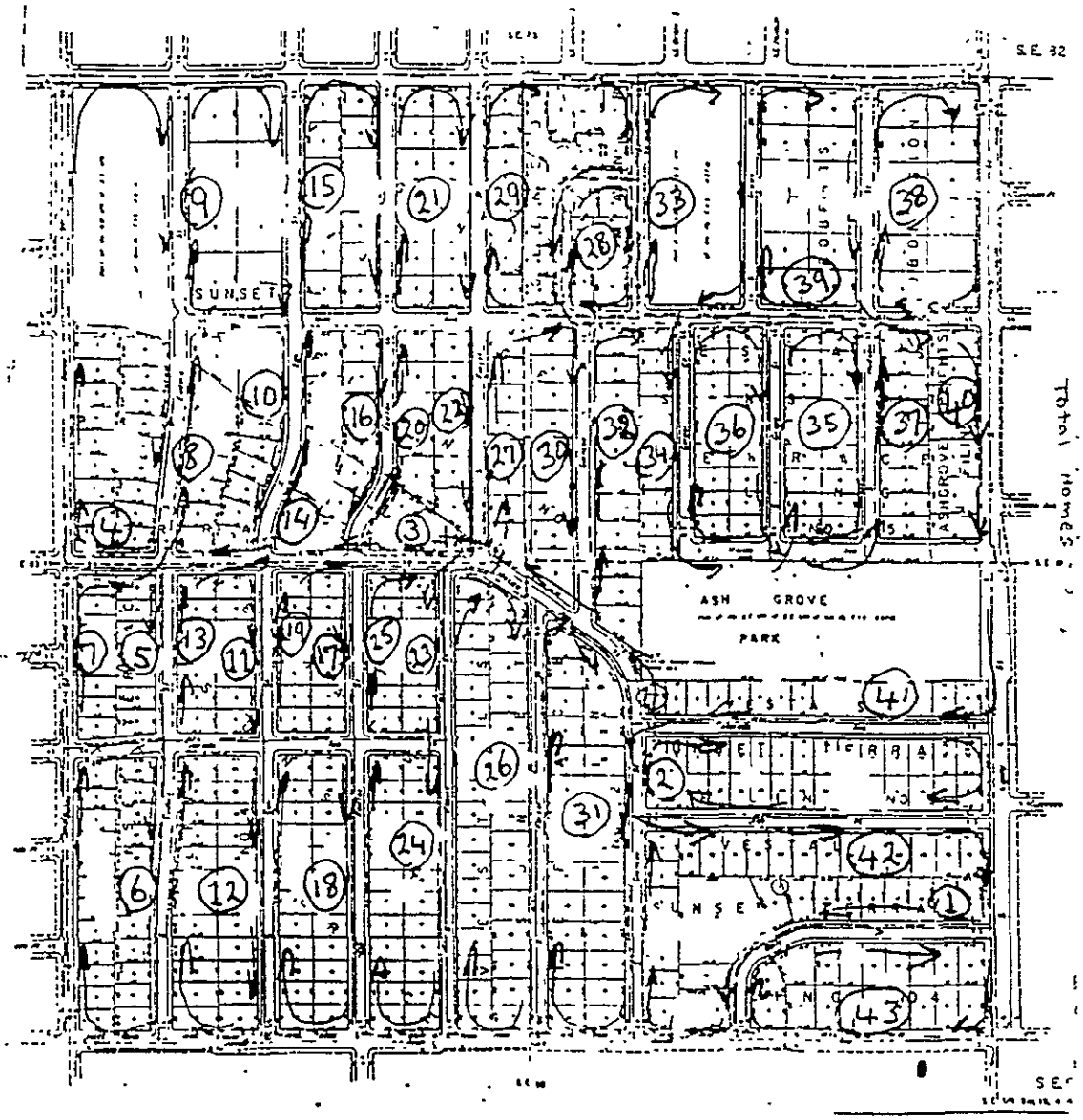


EXHIBIT 23