CITY OF CAMBRIDGE

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June 5, 1991

Joseph E. Connarton
City Clerk
City Hall
795 Massachusetts Avenue
Cambridge, MA 02139

Re: Cambridge Environmental Program

Dear Mr. Connarton:

I enclose a copy of your letter to me of May 17 with which you sent me certain Code Amendments comprising the Cambridge Environmental Program. You ask me to "... review these proposed amendments to ensure that they are in context with the Municipal Code ...." I have the following observations:

1. I do not believe that the Cambridge Environmental Program could be Chapter 2.114 of the Code. According to our copy of the Code (updated on 4/16/91), Chapter 2.114 covers Public Development Arts Projects. Perhaps the Environmental Program could be Chapter 2.118.

2. Title 17 of the Code is now devoted to Zoning. Perhaps "Environmental Quality" could be either Title 16 or 18.

3. Why is the first Chapter in Title 17 Chapter 17.04? What happened to 17.02?

4. What happened to 17.06?

5. Section 17.08.040(3)(A) states that "Departments are encouraged to consult with staff of the Cambridge Environmental Program", but it is not clear who these staff people will be. Section 2.114.020 does not authorize the Environmental Program Director to hire staff. See also §17.08.050.

6. In §17.24.020, there is a reference to Chapter 17.16 of the Code, but this Chapter was not included in the package you sent to me.

7. Why have Chapters 17.10, 17.12, 17.14, 17.18, 17.20, 17.22, and 17.26 been omitted?

If you have any questions about these amendments, please direct them to Birge Albright.

Very truly yours,

Russell B. Higley

RBH/jab

cc: Donald A. Drisdell

CORR#3\CEPrgrm.ltr

OFFICE OF THE CITY CLERK

CITY OF CAMBRIDGE

CITY HALL, CAMBRIDGE, MASSACHUSETTS 02139

(617) 349-4260

JOSEPH E. CONNARTON
CITY CLERK

JOHN E. FLYNN
DEPUTY CITY CLERK

May 17, 1991

Mr. Russell B. Higley
City Solicitor
City Hall
Cambridge, MA 02139

Dear Sir:

Please be advised that at the City Council meeting of Monday, May 13, 1991 the City Council accepted the report from the Councillor Duehay, Chair of the Committee on Environment regarding the discharge of the Cambridge Environmental Program from the Committee. In this report there were the following proposed amendments to the Municipal Code which was then referred to the Committee on Ordinances:

1. Chapter 2.114 - Cambridge Environmental Program. (Public Development / Arts Projects)
2. Chapter 17.04 - Cambridge Environmental Quality Policy.
3. Chapter 17.08 - Environmental Planning.
4. Chapter 17.24 - Environmental Impact Response.
5. Chapter 17.28 - Environmental Permit Program.

? ? — Title 17, Zoning

Would you kindly review these proposed amendments to ensure that they are in context with the Municipal Code prior to the hearings before the Committee on Ordinances.

Your kind attention in this matter will be greatly appreciated.

Sincerely yours,

Joseph E. Connarton

Joseph E. Connarton
City Clerk

JEC/dl
ENCS. (5)

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Sincerely yours,

Joseph E. Connarton

Joseph E. Connarton
City Clerk

JEC/dl
ENCS. (5)

An Ordinance to Create

protection ordinance Cambridge Environmental Program

In amendment to an ordinance designated as the "Cambridge Municipal Code."

Be it ordained by the City Council of the City of Cambridge as follows:

Chapter 2 of the Code (Administration and Personnel) shall be amended as follows:

Chapter 2.22.01 of the Code, entitled "Created- Management and Personnel," subsection A.1. shall be amended to include:

- Environmental Program.

New Chapter 2.114, "Cambridge Environmental Program," shall be created as follows

Chapter 2.114

Cambridge Environmental Program

Sections:

2.114.010 Cambridge Environmental Program - Establishment - Mission.
2.114.020 Cambridge Environmental Program Director - Appointment - Term - Powers and duties - Civil service and tenure rights - Compensation.
2.114.030 Mission Statement.

2.114.010 Cambridge Environmental Program - Establishment

There is hereby established in Cambridge a Cambridge

Environmental Program (CEP). At the discretion of the City Manager, the CEP shall be the focal point for efforts to improve the quality of the physical environment of Cambridge. The CEP shall be contained within the Executive Department (as defined in Code Chapter 2.22.010.

2.114.020 Environmental Program Director - Appointment - Term - Powers and duties - Civil Service or tenure rights - Compensation.

1. The Cambridge Environmental Program shall be under the control of the Environmental Program Director, who shall be an assistant to the City Manager.

2. The Environmental Program Director shall be appointed by, and serve at the discretion of, the City Manager.

3. The powers and duties of the Environmental Program Director shall be such as are designated and assigned from time to time by the City Manager. The Environmental Program Director shall have all the powers, rights, and duties that the City Manager shall determine as are necessary, consistent with the powers and duties assigned by the City Manager.

4. The Environmental Program Director shall have no rights under civil service, nor acquire any rights of tenure in any manner. The Environmental Program Director shall receive as annual compensation the same amount set forth in Chapter 2.62.010, subsection 4 (category IV).

2,114,030 Mission Statement

It is the mission of the Cambridge Environmental Program to increase the City's ability to exercise leadership on environmental issues. The office would assist the City Manager by: formulating and communicating environmental norms, policies and standards; assisting operational departments' compliance efforts; transmitting feedback to all concerned about the results of efforts to improve environmental quality; recognizing those who make progress, and devising remedies for those who fail to live up to the expectations of the City Manager.

Furthermore, amendments to the Code which concern themselves with environmental issues may henceforth be contained in new Title 17 of the Code, "Environmental Quality."

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Furthermore, amendments to the Code which concern themselves with environmental issues may henceforth be contained in new Title 17 of the Code, "Environmental Quality."

Cambridge Environmental Program

FINAL REPORT

A proposal for the City of Cambridge

Prepared for Councillor Francis H. Duehay

by

Jon Kessler
John F. Kennedy School of Government,
Harvard University

1 March 1991

Foreward

The Interim Report of this study demonstrated the need for and benefits of a comprehensive municipal program of environmental protection. It called for public input in the further design of that program. This Final Report on the Cambridge Environmental Program has been strongly influenced by the response of institutions and citizens of Cambridge, as well as the analytical and empirical investigations described in the Interim Report. More than one observer has commented on the tremendous access and assistance given to this study by the City of Cambridge, residents, businesspersons, and interested bystanders.

Many thanks go to the staffs of the City Council and City Manager's Office: Sandra Albano, Dorothy Giacobbe, Dianne Squires, Maryellen Vera and Phyllis Vera. That the budget staff, Louis DiPasquale, Hussein Abby, and David Holland, both participated in the drafting of this report and shared offices with me was a very happy coincidence. Tamara Levin helped me in endless battles with the computer.

I am continually surprised and humbled by the attention given my work by members of the community too numerous to thank here, and by officials at the Department of Environmental Protection, Executive Office of Environmental Affairs, and Environmental Protection Agency Region I. Most notably, Commissioner Daniel

Grennbaum, Linda Benevides, and the Northeast Region staff of DEP had a tremendous impact on the findings of this report.

Two groups, one made up of City officials, the other of concerned citizens with considerable expertise, have provided invaluable support from beginning to (what they might have thought would be endless) final revision of this report. Dr. Melvin Chalfen, Commissioner of Health and Hospitals; Liz Epstein, Director of the Cambridge Conservation Commission; Lisa Peterson, Executive Assistant to the City Manager; Mike Rosenberg, Assistant City Manager for Community Development; Richard Rossi, Deputy City Manager; and Diane Wynshaw-Boris from the Cambridge Law Department, have tirelessly worked to refine draft after draft of this study. So too have Doug Fine of DEP's Hazardous Waste Dvision; Attorney Jon Kaledin; Rick Reibstein, Director of the Office of Technical Assistance lately at EOEA; Kathy Sedor from the Environmental division of Gaston & Snow; and Powell Woodward, a consultant on education and environmental issues.

From the Kennedy School, professors Tony Gomez-Ibanez, Henry Lee, Micahel Barzelay, Melissa Roderick, and Alan Altshuler all made valuable contributions to the analytical portions of this study. Professor Michael O'Hare and Hon. Charles Royer served as principal academic advisors, and provided valuable insight and perspective.

Finally, special thanks and best wishes go out to Councillor Frank Duehay. Frank's unbounded commitment to improving the community which has been his life's home is directly responsible everything that this study has accomplished. To Frank and Jane I offer my best wishes.

building, and environmental permit procedure would furnish incentive for developers to participate.

Volume Two: Volume Two of this study is a theoretical discussion of the empowerment approach to managing environmental issues. That approach underlies the strategy of the Cambridge Environmental Program proposals discussed in Volume One. Using recent issues faced by the City of Cambridge as examples, Volume Two compares empowerment to the traditional method of environmental management called command and control. Just as the Executive Department may use the empowerment approach to move operational departments towards effective management of environmental issues, so too can operational departments use empowerment to move Cambridge residents, businesses, and institutions towards environmentally sound practices. The final section of this study applies an empowerment strategy to the problems faced by the Department of Public Works in encouraging the public to adopt sound waste management practices.

Conclusion: The City of Cambridge faces an ever growing set of environmental challenges. The purpose of this study is not to catalogue the City's problems, but to suggest positive steps towards solving them. Improving the capabilities of the Chief Executive to lead on environmental issues through a strategy of empowerment is a sensible way to start.

Cambridge Environmental Program

FINAL REPORT

Volume One

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Introduction

Environmental functions of the City of Cambridge are distributed among fifteen City agencies and a half-dozen citizen boards. Programmatic initiatives have been delegated to particular agencies for many reasons: state requirements, operational convenience, or the enthusiasm of a particular department. These programs are administered by a sizable and diverse group of City employees, although only a few have dedicated staff support.

Environmentalism is on the local agenda to stay. In response to mounting environmental concerns the City expects to take up a raft of new initiatives, ordinances and regulations in the near future. This process has already begun with the passage of four environmental ordinances in the current Council session.[1] State and federal regulators are poised to add new burdens in areas of traditional local responsibility such as waste management and water quality. State retrenchment has increased demands for local action on a wide range of environmental issues from toxic waste disposal to air quality. Without a sound organizational foundation, the new initiatives will disappoint citizens, needlessly drain staff resources, and create yet another mess for the City leadership to clean up.

The City generally attacks issues when crises erupt: a toxic spill, the discovery of organic contaminants in the water supply, etc. Many environmental hazards accumulate slowly. Their visible signs may never spring up in a way which would jolt the City into action. On the other hand, environmental hazards do not always grow incrementally in a predictable fashion, they may only become problems beyond a threshold point. Consider the problem of Trihalomethanes (THM's) in the water supply. THM's did not first become an environmental problem when they were discovered as a political issue. Their sudden emergence as a perceptible problem

caught the City off guard. Because the City was unable to explain the difficulty in dealing with this issue to its residents, confusion and misunderstanding followed. Similarly with the issue of air quality, a single measurement at a single spot, such as a measurement of high concentrations of low level ozone taken in Harvard Square, can cause great excitement. But it need not be the cause for governmental action. In seeking to identify emerging environmental hazards, a reliance on casual observation will surely lead the City in the wrong direction.

Shifts in public expectations for environmental quality are even less predictable. But as public consciousness of the environment widens, demands on municipal government will continue to grow. Consider the sudden popularity of curbside recycling. The Department of Public Works has by all indications performed admirably, improving rubbish collection and other functions in a time of fiscal restraint. Even the most adept handlers of public relations would have had a tough time with the community's sudden yearning for recycling. DPW has suffered without sufficient policy development, education, and public relations skills to deal with the suddenly powerful recycling issue.

Once problems have been identified, a lack of analysis and policy development capacity within operational departments has hindered timely resolution. DPW's response to pressures from the community and the elected leadership on recycling has been predictably mixed. Ties with the volunteer Cambridge Recycling Committee have been strained. The recent hiring of a top-notch curbside recycling coordinator has improved matters tremendously. But because of the late start, much work is yet to be done on the educational effort to accompany recycling. Talks on a regional materials recovery facility to accept recyclables appear to be sporadic. Proposals for handling yard wastes through composting have yet to receive earnest attention. Meanwhile, the state reacted to public demand by enacting regulations which require Cambridge to act on these

problems in very short order, or face non-compliance penalties.

Waste disposal would not be the first issue on which Cambridge can learn to work better with the state or neighboring communities. Feuds between the Water Department and the state Department of Environmental Protection, an unenforced parking freeze and the foreboding 'scheme Z' proposal for the Central Artery all have come about, in whole or in part, as a result of poor inter-governmental relations. The toll on Cambridge residents, businesses and institutions from these and similar incidents is not some figment of environmentalists' imaginations. Very strict parking regulations imposed by the state could poison the climate for new development. If built, scheme Z will be a permanent blight on Cambridge and the Charles River, destroying land and water resources. lowering quality of life for those who live near the superhighway, and virtually eliminating development or recreational potential in North Point. Poor inter-governmental cooperation has costs.

Efficient solutions to environmental problems are often interdisciplinary, straddling traditional divisions of authority and the well drawn lines of governmental hierarchy. Consider the hazardous waste issue, distributed among six City departments. To take another example, response to citizens' desires for a policy encouraging environmentally sound construction and development requires the coordination of many City agencies. One typically thinks of the Community Development Department, Planning Board, and Conservation Commission. But the Inspectional Services Department enforces the building codes, which would be used to prevent ozone depletion or promote energy efficiency from certain types of insolation; avert 'sick building syndrome' from ventilation systems; or track radon poisoning. Public Works has jurisdiction over recycling, for which such development would have to provide facilities. The Water Department might want to make sure the building did not cause contamination by improper cross-connection

into the water system or make inefficient use of City water supplies. Under state law, the Fire Department has responsibility for safe storage of toxic chemicals. Advisory powers on landscaping reside with a citizens' Committee on Public Plantings. How does the City leadership get these agencies to think about a problem which is, in many instances, far afield from their traditional focus? The question becomes more difficult when one considers that these departments typically lack time or the internal capacity to implement carefully crafted solutions. Were the various agencies brought on board, the result would be very burdensome for the regulated community without an impetus for coordination from the City leadership.

Neither existing government agencies nor citizens can keep up with advances in the scientific understanding of the environment. Problems like toxic spills, the parking freeze and recycling occupy more and more of the precious time of City leaders. Environmental concerns just over the horizon are sure to be even more troublesome.

This study's purpose is not to catalogue the many problems, but to bring the City closer to solving them. How can the City of Cambridge improve its capability to manage environmental issues? Management means identifying environmental issues proactively, developing thoughtful solutions to those problems, and implementing those solutions efficiently. General options which were considered include: no action; adding to the management capacity of particular departments; adding to the environmental management capacity of the Executive Department; and, agglomeration of environment-related city functions such as land use planning and waste pick up into a single large operational Environmental Department. This study finds in favor of an increase in the capability of the Executive Department as critical to successful handling of environmental issues. The pages which follow this introduction offer proposals for implementing that finding.

Following the introduction, Volume One, the Policy Analysis Exercize, begins with an overview of the proposed actions. Next, Section I deals directly with the question of increasing the ability of the Executive Department. In response to specific concerns for growth management, Section II offers ways to use these new abilities, particularly inter-departmental coordination, to bring about environmentally sound construction and development in Cambridge through participation in state Environmental Impact Reviews and a voluntary Cambridge Environmental Permit Program. Each analysis is divided into: (1) a description of the proposal; (2) the expectations for the proposal of overseers and other major stakeholders[2]; (3) a set of criteria for evaluating the proposed action defined according to these expectations; and (4) an evaluation of the proposal according to the criteria.[3]

These proposals for improving the ability of the City Manager to exercise leadership on environmental issues incorporate a particular approach to environmental management, called the empowerment approach. Volume Two of this study is a more theoretical discussion of the empowerment approach. Section I of that volume compares empowerment to the traditional method of environmental management, called command and control, using examples from recent issues dealt with by the City of Cambridge. It describes the essential elements of an empowerment strategy. Just as the Executive Department may use the empowerment approach to move operational departments towards effective management of environmental issues, so too can operational departments use empowerment to move Cambridge residents, businesses, and institutions towards environmentally sound practices. Volume Two, Section II, applies an empowerment strategy to the problem faced by the Department of Public Works in encouraging the public to adopt sound waste management practices.

Background

Background work on this study has included the gathering of information on the programs of many progressive localities and states, and exploration of several models on which Cambridge might build an environmental program of its own. Forty-odd cities in the United States and Canada, the National League of Cities, Local Government Commission, Massachusetts Municipal Association, Conservation Law Foundation, and the Harvard University Center for Science and International Affairs and Center for Business and Government all contributed data. Officials of the United States Environmental Protection Agency (EPA), the Massachusetts environmental agencies, and environmental departments from other states also provided information. Innovative programs at all levels of government, as well as extragovernmental initiatives, were investigated. Conversations with elected officials, managers, engineers and environmental officers from inside and outside Cambridge resulted in many of the observations contained in this paper. This study has also benefitted from an eight month survey of the internal workings of Cambridge City government. A department by department inventory of the various tasks related to environmental protection was conducted. Documents and anecdotal information provided by the City Council, City Manager's office, departments and commissions, and the Massachusetts Department of Environmental Protection (DEP) contributed to assessments of City programs in the environmental area. Of great importance in this study was an examination of major environmental issues facing Cambridge, including: air quality (indoor, outdoor, and atmospheric), biotechnology, energy efficiency, health and safety regulation, land use, noise, pesticide use, open space management, sewage treatment, solid wastes, traffic control, toxic chemicals, tree conservation, visual pollution, water, waterfront access, and wetlands.[4]

Overview:

The Cambridge Environmental Program

Responsibilities

This report recommends the establishment within the Executive Department of the Cambridge Environmental Program (CEP). Its direct overseer would be the City Manager. The CEP would serve the needs of the City Manager by furthering City-wide compliance with environmental norms. The elements of the CEP are described here briefly.

Office of the Director: This office would increase the City Manager's ability to exercise leadership on environmental issues. The office would assist the City Manager by: formulating and communicating environmental norms, policies and standards; assisting operational departments' efforts to meet the environmental challenges given them by the City Manager; transmitting feedback to all concerned about the results of efforts to improve environmental quality; recognizing those who make progress, and; devising remedies for those who fail to live up to the expectations of the City Manager. Much of the daily work of the office would be in the areas of policy development, information gathering, and inter-departmental coordination.

Environmental Impact Response: The Environmental Impact Review is the central feature of the Massachusetts Environmental Protection Act. The findings of such reviews have a powerful influence on the nature of large scale development. This proposal would make use of the coordinating skills of the CEP to improve the City Manager's capability to respond to Environmental Impact Reviews in the interests of Cambridge.

Environmental Permit Program: The goal of the Environmental Permit Program would be to produce a built environment in Cambridge more mindful of environmental concerns. The Permit would achieve its goals through clear and specific voluntary environmental standards for new construction. At the same time, permit costs would be reduced through a simplified overall permitting process for building, zoning, and environment-related construction permits. The Environmental Permit Program would be a truly inter-departmental effort. The CEP would assist and coordinate the work of departmental and citizen representatives in the development of the standards, as well as implementation of the Permit Program.

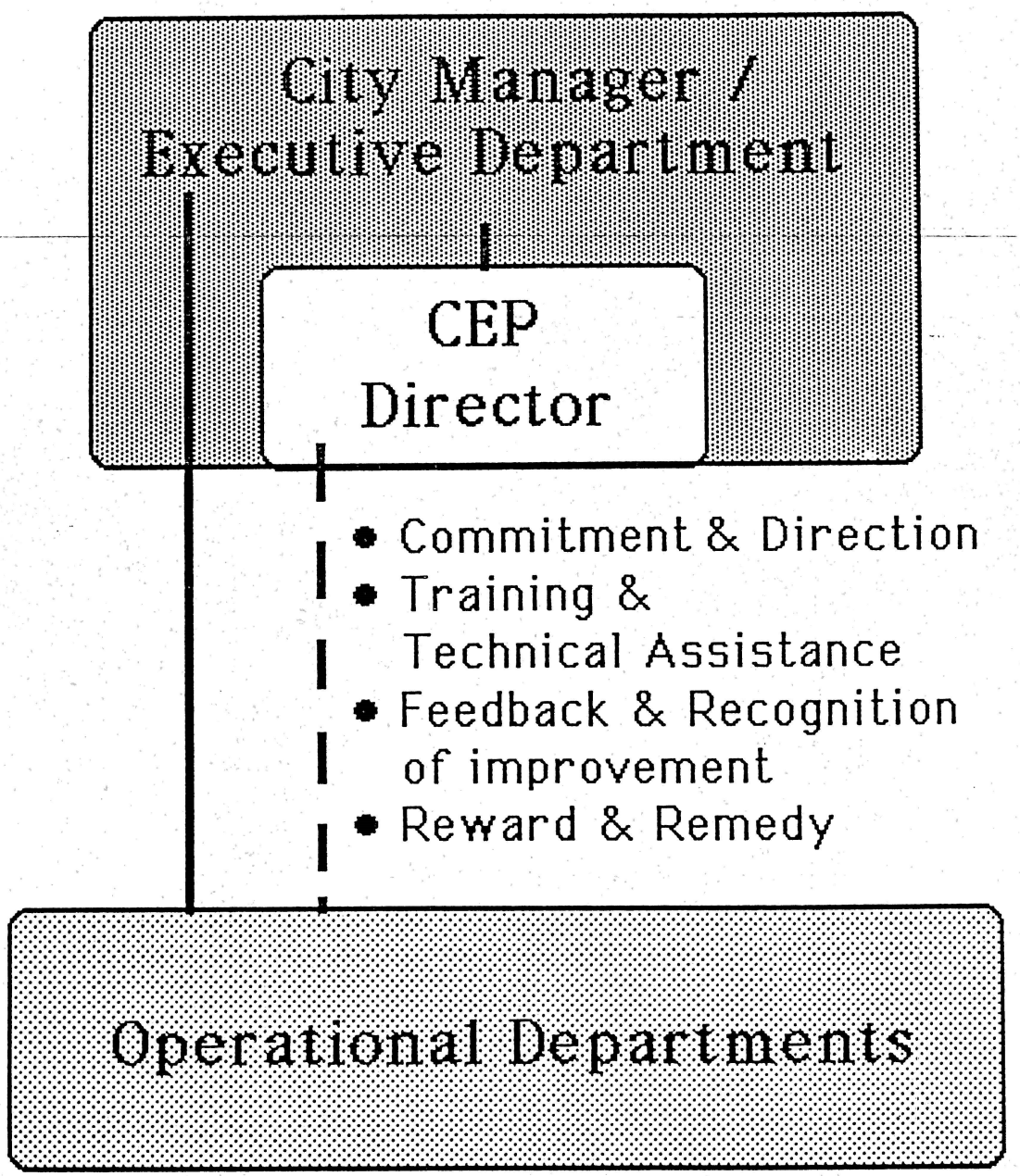
The proposals discussed in this volume would confer on the CEP a wide range of responsibilities, ranging from policy development to community relations. In the view of this analysis, this mix of responsibilities would leave the CEP well prepared to assist the City Manager in the exercise of environmental leadership.

Resources

The varied functions of the Cambridge Environmental Program would be initially carried out by a professional staff of three, consisting of a Director and two assistants. If possible, one of these positions should be filled by the staff of the existing commuter assistance program of the Community Development Department, which would become part of the CEP Environmental Permit Program.

Budget projections for the CEP are based on comparisons with existing agencies of similar size and scope of responsibilities, in particular the budget staff of the Executive Department. This study projects an annual budget for the CEP of $205,000.00 beginning in FY' 92. Financing for the CEP would consist of a new annual allocation of $165,000 and reallocation of $40,000 currently designated by the Community Development Department for its commuter assistance program. There are several alternative funding sources. Termination of subsidized commercial solid waste removal service offered by the Department of Public Works would save an estimated $100,000 to $200,000 annually.[5] An increase in the residential parking sticker fee from $4 to $6 would raise an additional $20,000.[6] Am increase in municipal garage prices commesurate with market rates should also be considered.[7] A startup endowment for the Cambridge Environmental Program could be earned through a fee for the new parking space permits expected to be administered under the revised parking freeze.[8]

Cambridge Environmental Program



Section I:

Cambridge Environmental Program

Office of the Director

1. The proposal: This study proposes the creation of the Cambridge Environmental Program within the Executive Department of City government. The CEP would be led by an environmental program Director reporting to the City Manager. The purpose of the office of the Director would be to assist the City Manager in leading the City's environmental quality efforts. The office of the Director would:

identify emerging environmental issues, public concerns, and pending regulatory and legislative changes.

assist City agencies, the Manager, and the Council with long range planning and policy development.

facilitate interdepartmental coordination on environmental issues, including an Environmental Permit Program and Environmental Impact Response.

train City employees on methods for incorporating environmental quality into the decision making process.

provide timely nuts-and-bolts information on environmental issues to City agencies at all levels.

seek and communicate feedback on the results of environmental quality improvement efforts throughout the City.

advise the City Manager on policy and budgetary issues relating to the environment.

develop and operate a formal recognition program for City employees who take the initiative on environmental quality.

The job of CEP Director requires a balance between analytical and educational skills. The Director should have academic training or demonstrated expertise in environmental science, policy analysis or economics. The Director should have working knowledge of Massachusetts' environmental laws and agencies, and general

understanding of urban environmental issues. But the CEP need not be run by an environmental engineer. Inter-personal and educational abilities would be perhaps more important than technical knowledge.[9]

2. Expectations for the proposal: The principal overseer of the Office of the CEP Director is the City Manager. The Manager sees the CEP as something of a compliance program, much like the budget office. He expects the Director to undertake activities which promote City agencies' ability to comply with environmental protection norms and rules. He views the Director as a facilitator and time saver rather than an overseer in the traditional bureaucratic sense. The Manager does not want the Director to obstruct the general decision or information paths between himself and the departments, but expects assistance in managing them.

Other stakeholders in the new office are operational departments and the public. Leaders of operational departments want to avoid adding layers of bureaucratic oversight. They see the potential role of the CEP Director as limited to meeting their informational needs. On the other hand, Cambridge residents, and to some extent their elected representatives, envision the Director as environmental advocate:

> the Director must be something of a crusader... who's ready to advocate the cause, and who can mobilize public opinion somewhat outside of the play it safe constraints that characterize the behavior of public bureaucracies.[10]

Obviously, there are profound conflicts between the expectations of the City Manager and segments of the public. The Manager is looking for some way to smooth the process of environmental management. Citizens' groups want the environmental program Director to make waves. The question here is one of accountability. Is the Director a creature of the Executive Department, is she responsible to a higher public interest, or perhaps to a specific interest group? More subtle is the potential

conflict between the expectations of the City Manager and those of the operational departments. While neither side wants to impose a new layer of decision-making authority between them, the Manager may want in specific cases to delegate management or oversight authority to the environmental program Director.[11] Such grants of authority run contrary to the desire of operational department heads that the Director's role be limited to assisting them. This commingling of service and control tasks may prove difficult to maintain.[12]

3. Evaluation criteria: The CEP Director can meet the expectations of the City Manager while taking into account the concerns of other stakeholders such as operational departments and the public. The service that the City Manager expects the Director to provide is City compliance with the environmental standards of Cambridge.

Compliance does not mean simply following a set of pre-designed rules and regulations. Environmental issues are complex and in many cases uncertain in nature. Compliance will require City employees to think.[13] Many of the expectations of the Manager with respect to environmental quality cannot or should not be put in the form of restrictions or requirements for the operational departments. An attempt to enforce such rules through a powerful or over-arching bureaucracy will surely fail at great cost in terms of institutional good will.

Research, particularly in the area of total quality management, has identified the following conditions as critical to achieving compliance,[14] To the extent that the proposed CEP Director can bring about these conditions, she will successfully meet the expectations of the City Manager.

A. Clear direction from the leadership to the departments about purposes and desired outcomes, ie: what are we complying with and why?[15]
B, A bureaucratically powerful CEP Director.
C. Availability of material resources for departments trying

to meet environmental expectations.
D. Ease of compliance, ie: lack of cumbersome bureaucracy.
E. The frequency with which employees who comply are recognized.
F. The extent to which non-compliance is made more costly than compliance.
G. The belief that others are complying with environmental expectations as well.

4. Evaluation of the proposal:

A. Will the proposed office of the CEP Director help the City Manager provide clear direction on environmental norms? Norms are the City's values and expectations, in this case with respect to environmental quality. Norms are expressed through laws, policy statements, principles, standards, rules, and of course the actions of decision makers.[16] They may be embodied as precedent, institutional memory, or "the way things are done."[17] With respect to environmental quality, City agencies currently have very few norms on which to rely.

The CEP Director would have the capability to help the City Manager develop and communicate such norms. By identifying and analyzing emerging environmental concerns and changes in state and federal regulation, the Director would afford the Manager a clearer understanding of the facts surrounding environmental issues. She would be able both to educate the public and in turn extract its expectations and desires with respect to environmental quality. The Director could also use her policy analysis and development skills to formulate guidelines and standards which give City employees direction on environmental issues rather than simply constrain their actions. Finally, feedback from the public and City leadership, facilitated by the Director, would give operational departments a greater understanding of exactly how they are perceived, what they are doing right, and what needs to be changed.[18]

B. Will the CEP have bureaucratic power? Despite the lack of full department status and the budgetary and staff resources that go along with it the CEP Director would have some inherent bureaucratic power, and the ability to generate more. The first source is the Director's discretionary ability to bestow a sort of environmental legitimacy on the actions of the departments. In the past year, for example, the Water Department has come to appreciate the importance of being able to demonstrate environmental sensitivity, A second and related point, the Director would derive power from the continued support of citizens of Cambridge for environmental protection measures. Third, power would flow from the provision of the technical assistance needed by operational departments, in some cases simply to meet statutory requirements.

For the most part, however, the power of the CEP Director will be determined by the actions of the City leadership. Organizationally, the proposal puts the CEP Director in close proximity to the City Manager. Everyday practice should reflect this state of affairs. The Manager's active support and participation in CEP activities is essential to establishing seriousness of purpose and long-run commitment to environmental quality City-wide. For its part, the City Council will send a strong message simply by expending funds on creating the CEP in a time of fiscal restraint. Appendix C contains specific proposals for the City Council and Manager which would demonstrate their commitment to environmental quality and the CEP.

C. Will the office of the Director be able to increase the amount of resources available to the departments for compliance with environmental norms? Among the objections to creating a large environmental bureaucracy is the point that the large costs of administering such a bureaucracy would come out of the limited pool of resources available for environmental protection itself. Relative to that alternative, the CEP is an inexpensive option.[19] Moreover, the CEP would provide the departments with many of the

non-budgetary resources necessary for compliance with environmental norms, notably issue identification, information gathering, planning and policy development. Finally, the Director would likely be a major force in promoting departmental proposals for increased resources on worthy environmental quality initiatives.

D. Will the office of the Director make it easier for departments to comply with environmental norms or more cumbersome? The proposal benefits greatly from the focus on service over command and control activities. Based on observation, this study contends that the enactment of new regulations or creation of a new agency with broad oversight power will not bring about compliance with environmental norms. Existing departments would see such an agency as a hinderance best avoided. The agency would be seen, correctly or not, as an obstacle to doing good rather than a facilitator. In contrast, the CEP serves its purpose by assisting operational departments' efforts to comply with environmental norms, principally through policy development, training of departmental staff, inter-departmental coordination and information gathering.

It may be argued that the existence of an environmental office would encourage the City Council to adopt an ever-growing set of environmental restrictions on City agencies.[20] New environmental ordinances are undoubtedly on the way. To this point the City has relied on the command and control approach to environmental regulation. However, because of its orientation towards service, the CEP would more likely prevent rather than encourage the use of cumbersome regulatory solutions to environmental problems. Furthermore, the public and its elected representatives may be willing to give the CEP Director, as opposed to operational department heads, more leeway in determining the means of achieving their environmental goals. They may be willing to forsake strong regulatory controls if the Director proves herself effective in the non-regulatory role.

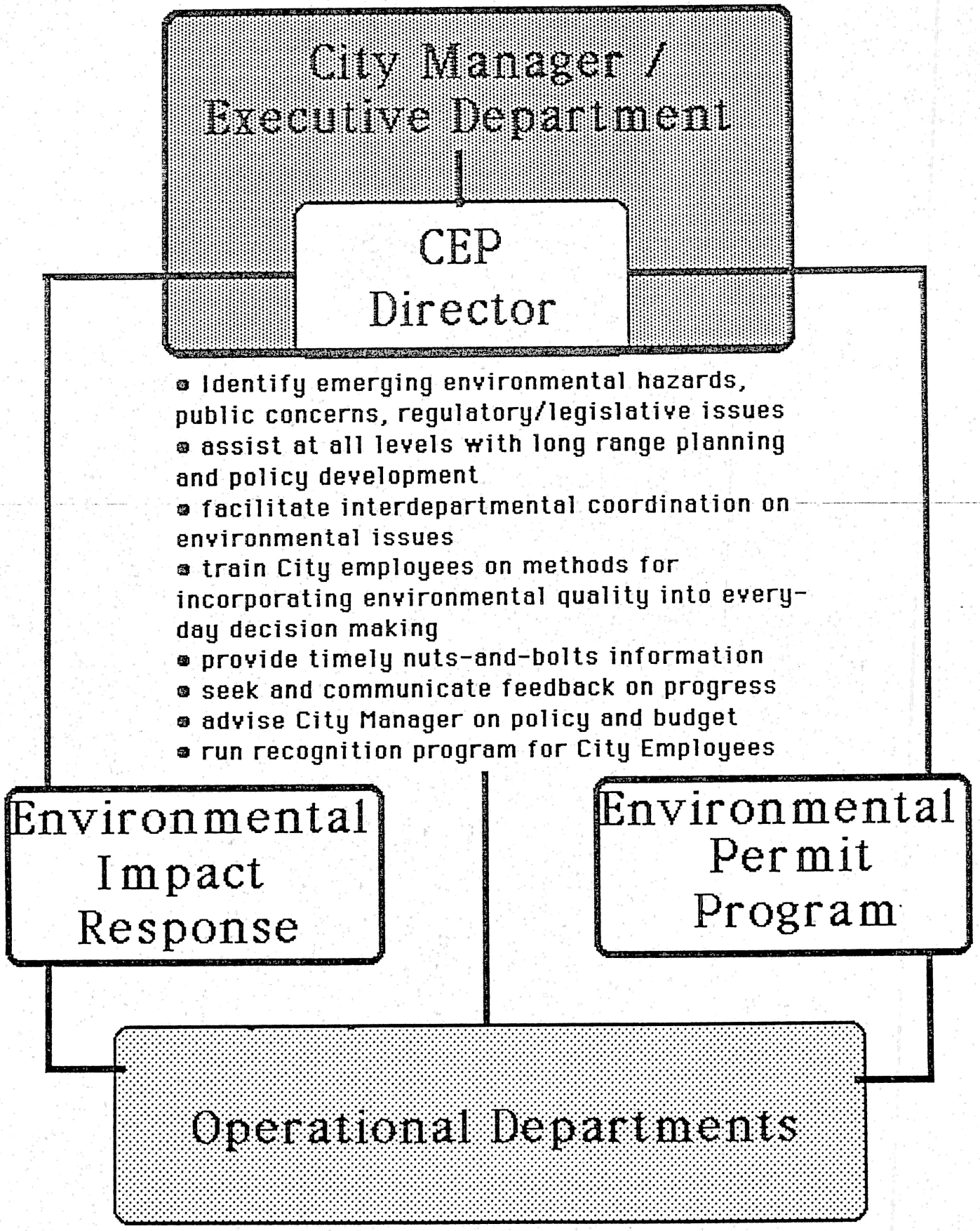
E. Will the office of the CEP Director recognize employees who take initiative on environmental quality? The City Council recently established a Citizens Advisory Committee on Environmentally Desirable Practices[21] for the purpose of recognizing those establishments in Cambridge which take the initiative on environmental quality. The CEP Director would work with the Committee to develop a formal reward and recognition system for City employees and agencies as well. Currently, those within the City who take environmental initiative, such as those Public Works employees who volunteer for tree maintenance, are not rewarded. The salutary effects of personal recognition, even without real (financial) reward or other tangible benefits, cannot be overestimated.[22]

F. Will the CEP Director be able to make non-compliance relatively more costly than compliance? The CEP Director would make compliance rewarding and non-compliance costly by supporting complying agencies' requests for funding initiatives related to environmental quality, their policy proposals to the City Council, and by opposing requests and proposals of non-complying agencies.[23] Of course, the usefulness of this approach depends on whether the City Manager and City Council heed the recommendations of the CEP Director. The CEP Director can also make compliance rewarding by acknowledging departments' progress wherever possible, and by easing any bureaucratic rules under her discretion for those agencies that routinely comply.

F. Will the CEP Director succeed in bringing about widespread compliance with environmental norms? Neither a reliance on strict controls nor the approach taken in the proposal will ensure perfect obedience to the environmental norms set by the City leadership. But underlying the proposal is the recognition that efforts to force agencies into compliance will not succeed if those agencies do not agree, or at least understand, the purpose of compliance. Where this is the case, agencies will cheer on non-compliers in the

same way that citizens often favor speeders over law enforcement officers. By increasing the departments' understanding of environmental issues through education and training and taking seriously its tactical aim of serving the needs of the departments, the office of the CEP Director would bring about greater agreement with environmental norms.

Office of the CEP Director



Section II:
Environmentally Sound Development
Environmental Impact Response,
Environmental Permit Program

This section outlines two proposals responding to the expressed desire for the greater inclusion of environmental considerations in new construction and development in Cambridge. Both proposals take advantage of the CEP Director's potential for facilitating inter-departmental coordination. Environmental Impact Response builds on existing practice a standard operating procedure for City participation in state and federal environmental impact reviews. A local Environmental Permit Program would encourage the environmental soundness of future construction in Cambridge.[24]

Environmental Impact Response

The Environmental Impact Review (EIR) process is the central feature of the Massachusetts Environmental Protection Act (MEPA). MEPA requires such reviews of all manner of state projects and larger private undertakings. Projects which involve federal action fall under the Environmental Impact Statement (EIS) procedure of the National Environmental Protection Act (NEPA).[25] The EIR requires several periods of public comment, during which the City and its agencies, along with other government units, private citizens, and interest groups, may submit written and oral comments on various draft and final documents. This proposal builds on existing informal practice a standard operating procedure for the City's participation in EIR's.

Widespread interest in improving the City's participation in EIR's has grown out of its experience with the Central Artery/Third

Harbor Tunnel project. The Artery is used here as a case study. In terms of sheer size the Artery is not representative of the majority of projects likely to confront the City in the future. But, like a stress-load test on a bridge or building, the vast and complex Artery project has exposed various cracks, fissures and structural inadequacies in the City's handling of EIR's. Furthermore, the administrative process through which the Artery project currently travels exhibits characteristics typical of EIR's of the past fifteen years. Conclusions drawn from the Artery experience can be generalized and used to improve the City's approach to future EIR's.

1. The proposal: Out of the Central Artery experience the operational departments have developed an informal coordinating mechanism to respond to future EIR's. This study recommends the strengthening and formalization of that process.

A permanent inter-departmental group, the Environmental Impact Response Committee, would have responsibility for City participation in EIR's.

Departments represented on the Committee would include: Community Development, Health and Hospitals, Law, Public Works and Water, as well as the Conservation Commission.

Departments should send to the Committee either department heads, their deputies or management personnel. Committee members would act at the direction of their departments.

The CEP Director would represent the Executive Department, act as chair, and provide staff support to the Committee in the form of an environmental impact response Coordinator.

With regard to any particular EIR, the Committee would:
- review developments as presented by the Coordinator;
- determine whether the public interest warrants City participation;
- develop a draft unified City position or set of options, stating the merits and drawbacks of each;
- present the draft response to the City Manager.

A member of the CEP staff would act as environmental impact response Coordinator. The Coordinator would be Cambridge's eyes and ears within the EIR process, and a lighting rod for internal concerns about upcoming EIR's. The Coordinator would:

- monitor activities of the state and major developers to identify, at the earliest stage of planning, projects which may require EIR's;
- monitor submissions to DEP of Environmental Notification Forms, the first step in the EIR process;
- maintain communication with advocacy groups and others who routinely participate in EIR's;
-periodically produce and distribute within the City a Cambridge Environmental Impact Reporter, a summary of current activities which effect the City's environment and EIR's in progress;
- attend EIR public hearings and informational sessions;
- gather information on projects;
- solicit public opinion on planned projects;
- provide administrative support for the Committee;
- assist in implementation of EIR responses, testifying at hearings, meeting with project proponents, briefing City officials, etc.
- implement the City's response, including the development of a lobbying strategy, such as written comment on EIR related documents, presentations at public hearings, negotiations with state regulatory officials, organization of public response, etc..

The City Manager would, after appropriate consultation with the City Council, promulgate a final position on EIR related matters brought to his attention.

2. Expectations for the proposal: The goals of Environmental Impact Response are defined by the constituent groups of the EIR process: residents, the City Council, the Executive Department and other City agencies[26], the Cambridge Conservation Commission, project developers, and the Massachusetts Department of Environmental Protection.

Residents, those who live near proposed projects and those who place value on threatened environmental resources, feel that the City should effectively communicate their views regarding the impact of the project. The concerns of residents on any given project will differ depending on their location and interest. Many Cambridge residents oppose Scheme Z, the Central Artery Charles River crossing option backed by the Massachusetts Department of Transportation, due to claimed adverse environmental impacts. But

some residents of East Cambridge, for whom those impacts would be most severe, have supported the Artery because they believe the alternative, construction of luxury apartments on the site of proposed Scheme Z off-ramps north of Lechmere Square. would do more to destroy the character of their community than the eighteen story highway. Still others would live with Scheme Z in order to receive the benefits of proposed mitigation. So residents are also concerned that a single perspective on the project not dominate the City's thinking.

The concerns of the City Council are shaped by reliance of residents on individual Councilors to stay on top of rising EIR related issues and to communicate neighborhood concerns to state regulatcrs. The Councilors' needs are primarily informational in nature. At the earliest stages of the Artery project, the Council lacked any means of tracking the progress of the Central Artery. Thus it had few occasions to debate the matter or strike the compromises necessary to bring about a unified City position on which the Executive and operational departments could act.
To occasion such debate, City Councilors expect to be kept informed of EIR related matters, and to be consulted where necessary.

City agencies and the Executive Department participate in the EIR process for two reasons: first, to gather information on potential impacts of impending projects; second, to influence the decisions of state or federal regulators with respect to those projects. As one might expect, the positions taken by City agencies reflect their individual missions and points-of-view. Thus, officials of the Department of Public Works and Department of Health and Hospitals have watched the Artery EIR process to gather information on the possibility of building a household hazardous waste collection facility near the highway. From the EIR process, Community Development learned about the potential of the Central Artery to disrupt both plans for development at North Point in the long-run and traffic disruption on the City's arterioles during

construction. In turn, the prospects for North Point and concerns about traffic congestion have governed Community Development's attempts to influence state regulators through the EIR process.

Both the City Manager and City Council also expect Environmental Impact Response to flag issues which need their attention. Leaders in any government organization are very busy. Given the chance, decision makers could pick from a sea of troubles, each issue deserving of their attention. Usually the choices are made for them as issues pop to the surface based on singular focusing events: A judicial decision on a city ordinance brings street performers to City Hall; an accident draws attention to inadequate emergency planning; a number of union grievances suddenly make indoor air quality a priority. Not all focusing events are surprises: the release of crime statistics, annual budget hearings on Beacon Hill, City Council elections. In either case, decision makers must sometimes drop other business to deal with today's problem. In theory, early EIR documents should act as focusing events, elevating a particular project on the agenda of City leaders, if only for a brief time, so that they might give some direction to subordinates. Yet no signaling mechanism puts early EIR documents in a useful form on the desks of City decision makers. By themselves, City leaders cannot expect to track hundreds of project proposals on the state's or private developer's drawing boards. By the time a project percolates up the ranks, leaders find it impossible to reverse momentum or make fundamental design changes.

Of course, projects like the Artery do not just sneak up on the leadership. City officials at the highest level knew of the Artery in the mid-1970's. But nothing in particular suggested the need to take action. At that time, the issues surrounding the Artery were judged to be too complex, and the impacts too distant, for leaders to agree on a fixed City position. In some sense, the Artery was just one-of-a-thousand things that neither the Executive Department

nor City Council had time to stop and deal with. The City did not forget about the Artery, the Artery forgot about the City. Subtly and virtually without notice, the project itself metamorphosized. The City was not made aware of the consequences of design changes being planned deep within the state Department of Transportation. Those changes led inexorably to the much maligned scheme Z proposal, the preferred alternative of DOT. City leaders expect Environmental Impact Response to help them prioritize the really important EIR issues.

The Cambridge Conservation Commission has primary responsibility under state law for protection of wetlands, filled tidelands and shorelines. In addition, the Commission participates actively and independently in the EIR process. Because of the Commission's statutory independence from City Hall and reputation for thoughtful input, its EIR comments have been influential with DEP regulators. The Commission can lend substantial resources and credibility to the City's Environmental Impact Response. Consider, for example, the Commission's work on behalf of the Alewife Brook. However, its members will not participate if they have to give up the prerogative to issue independent comments.

Though state mega-projects are of greatest concern to the City, larger private developments like Alewife Center also fall into the EIR process. Developers want to maximize profits by achieving the maximum development potential for any piece of land. The EIR examines environmental impacts and should not be compromised by some sort of balance between environment and development at each step of the process. On the other hand, both developers and the City could realize benefits from a cooperative approach to EIR's. Environmental Impact Response should have enough flexibility to allow the City to work with developers at its discretion.

DEP regulators who make determinations on EIR's would be the target of Environmental Impact Response. They respond positively to

comments which are thoughtful in themselves and supported by effective lobbying efforts. Good lobbyists operate under pre-designed battle plans. They know that they will face the same regulators over and over again, and understand that a reputation for professionalism is crucial. And they do not send their big guns - visible public officials - into battle without preparation and guidance. Good lobbyists are experienced.

3. Evaluation criteria: The diverse expectations of these groups plus the context of the EIR process help establish criteria for evaluating any proposal for coordinated Environmental Impact Response. A proposal would successfully meet the expectations of constituents by the following.

A. Begin at the earliest stage of the EIR process.
B. Give voice to the concerns of Cambridge residents.
C. Reconcile inter-departmental differences on EIR's.
D. Inform interested departments and the City leadership about EIR's in progress.
E. Signal important matters to the City leadership.
F. Respect the Conservation Commission's prerogative to issue independent opinions.
G. Encourage voluntary accommodation with project sponsors.
H. Produce lobbying strategies which maximize the City's influence in the EIR process.

4. Evaluation of the proposal:

A. Will the proposal encourage action at the earliest stages of the EIR process? Under the proposal, action is triggered by the Coordinator, who would monitor planned development and the submission to DEP of Environmental Notification Forms. By designating specific responsibility for these tasks, the proposal would prevent the City from missing early opportunities to effect the final shape of projects under review.

B. Will the proposal give voice to Cambridge residents? Though the state's EIR process provides numerous opportunities for "public" comment, most of the discussion is carried on by organized interest groups. The proposal would increase opportunities for

residents to voice their opinions in several ways. First, the Coordinator would hold public fora to solicit residents' opinions on projects. Second, the presence of a well defined process would facilitate additional Cambridge media attention to EIR's, in turn bringing about more awareness and comment. Third, residents who wanted to express their opinions would have someone within City government to talk to. The Coordinator would be able to inject the viewpoints of specific residents into the deliberations of the Environmental Impact Response Committee.

C. Would the proposal help to reconcile inter-departmental differences on EIR's? The Environmental Impact Response Committee would likely become a forum for deliberation and discussion amongst representatives from the departments. In the later stages of the Central Artery discussions, similar inter-departmental meetings were found to be helpful in identifying inconsistencies in departmental positions and ironing out disputes. The City's Open Space Committee, which functions similarly, has also proven effective in this capacity.

D. How would the proposal inform interested departments and the City Leadership about EIR's in progress? Representatives on the Committee would report in the course of their work to their departments. The Environmental Impact Reporter would be a regular and concise source of information to City leaders, departmental staff and other interested parties. Furthermore, the Coordinator would be an informational resource for City Councilors.

E. Would the proposal signal matters for decision to City leaders? The proposal clearly includes the formal mechanisms for bringing decision items to the leadership. Procedure alone will not guarantee that the City Manager or Council takes decisive action. The proposal facilitates decision by providing EIR related information to the City Manager and Council in a concise and useful format, instead of raw EIR data.[27] Unlike, say a 'Blue Ribbon

Commission,' whose findings may be safely shelved, the Committee will expect an eventual response from the leadership. Finally, as everyone becomes more aware of the process, the leadership will internalize the importance of timely reaction to EIR's.

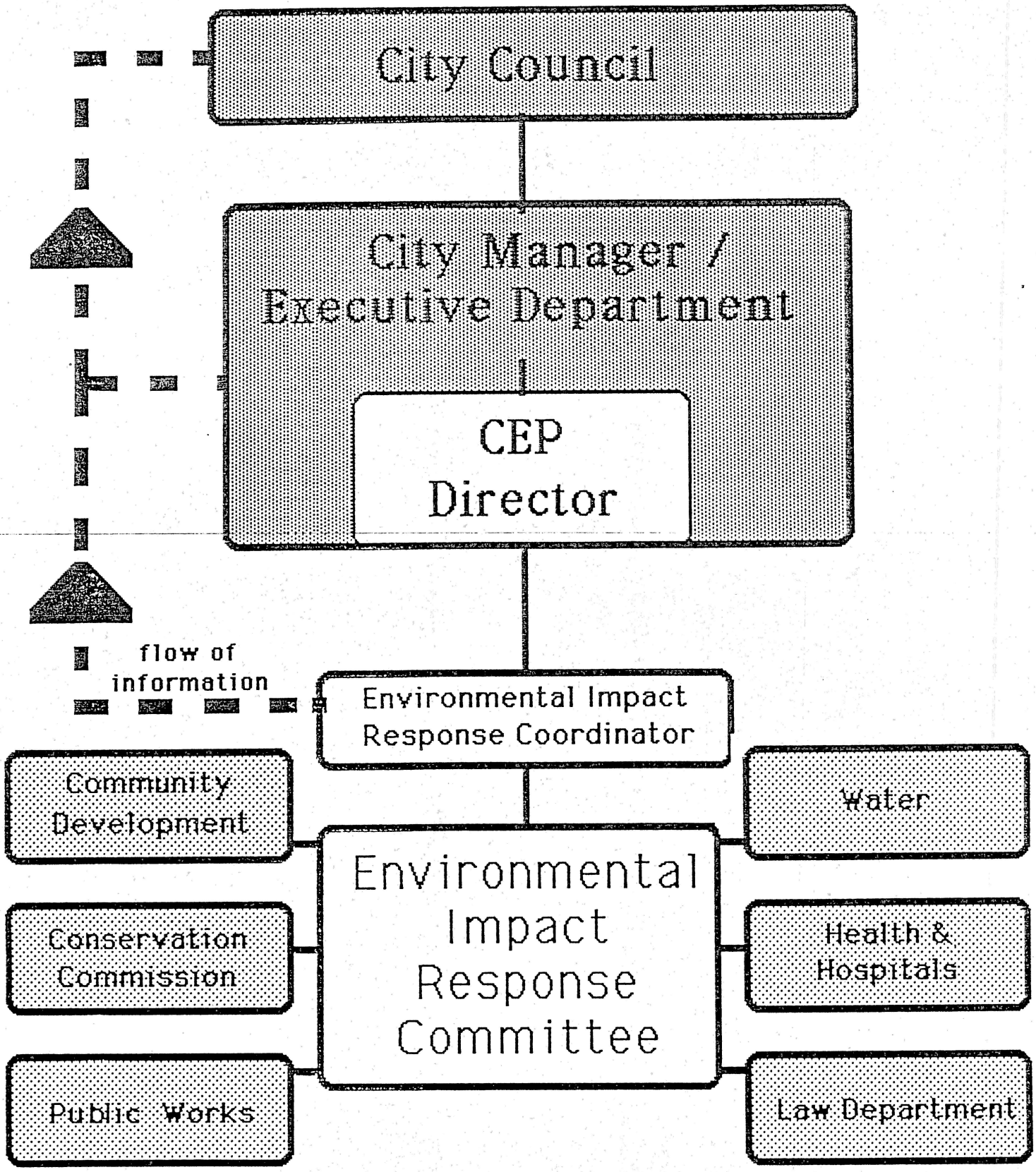
F. Does the proposal respect the Conservation Commission's prerogative to issue independent opinions? The proposal aims to create a coordinating linkage for City agencies and the Commission. An underlying aim is to channel the enthusiasm of the Commission (and departmental staff) into a City-wide process. When agencies produce independent and contradictory comments, the City as a whole loses influence in the EIR process. The Commission would retain the right to issue independent comments, although it is certainly hoped that this would not be necessary.

G. Would the proposal encourage voluntary accommodation with project sponsors? The proposal would have the effect of building up the City's bargaining position vis-a-vis project sponsors anxious for City support. The experience of the Conservation Commission has demonstrated the potential importance of early involvement in bolstering the City's position. As a project makes its way through the EIR process the costs of modification, particularly in terms of project delay, grow rapidly. As time goes on, the climate for accommodation worsens. An early statement by the City of its position with respect to a project may leave sponsors in a better position to comply with its requests. Furthermore, a more unified City approach will leave project sponsors more confident that they are dealing with the appropriate authorities. Sponsors will not, for example, feel that agreement with Community Development is useless because they may have to face the Conservation Commission later.

H. Would the proposal produce effective lobbying strategies? The keys to successful lobbying are strategy, consistency, and high-level support. The proposal provides the necessary resources to

develop lobbying strategies on EIR issues. By delegating responsibility for Environmental Impact Response to specific persons, the proposal allows for the development of a kind of expertise in dealing with the complicated EIR arena. The Committee, and particularly the Coordinator, would come to know the DEP officials who handle EIR's. Under the proposal, the City could not embark on a lobbying effort without support from the City Manager, and where necessary, the City Council.

Environmental Impact Response



Environmental Permit Program

Despite the current economic slowdown, the future of Cambridge will most certainly be filled with new construction. Within a few decades, many of the buildings of today will have been replaced or substantially reconstructed. Underutilized land will have been developed. An Environmental Permit Program aims to produce new buildings designed from the start to be more mindful of the environment than those which they replace.

The failure of existing regulations or the free market to produce buildings with sufficient environmental amenities has led to demands for additional development controls.[28] Existing regulatory controls on new construction inadequately address the issue of environmental quality. New construction in the City is controlled through zoning and various building permits. Through its authority over land use, zoning regulation has an impact on urban environmental concerns. The Planning Board, which administers zoning policy, gives serious consideration to related issues. But the power to control land use is a blunt instrument. Zoning lacks the sort of precision necessary to regulate the full range of environmental hazards. Attempts to turn environmental policies into zoning policies, for example traffic mitigation zoning, have shown the difficulties of this approach.[29] Through the EIR and EIS processes (discussed above), state and federal agencies analyze and disclose environmental impacts of projects they are involved in. EIR's offer an opportunity to inject environmental concerns into the design of certain large developments and state projects. Because relatively few projects fall into the EIR process, it cannot be relied upon to bring about environmentally sound development in Cambridge. Moreover, the EIR often disappoints environmental advocates because they fail to understand that MEPA, at its core, is a disclosure law. It requires only the production of information. In reality, regulators have wide discretion in incorporating EIR findings into their decisions. The Central

Artery experience has demonstrated some of the structural weaknesses of MEPA as a defense against environmental degradation at the local level.[30]

Furthermore, market mechanisms fail to provide sufficient incentive for consideration of environmental effects in new construction.[31] Environmental costs or benefits of development are often external to the transaction between developer and buyer. Noise pollution from a building, for example, is not a cost to building occupants but to their neighbors. Similarly, water, energy, and other inputs to a building's use are priced below their true marginal costs, creating an underutilization of conservation devices. Imperfect information or high transaction costs also prevent the efficient use of pollution control measures. In some cases, environmental amenities are public goods, non-rival and non-excludable. Consider the costs of traffic congestion caused by a new office building. The additional cars, and the congestion they create, cause air, water and noise pollution and create a generally unpleasant environment for those who live near the building. These costs are not borne either by the building's developer or those who occupy it; they are external costs. Gasoline, an input to auto use, is priced below social marginal cost. Another input to automobile use, the roadway, is (effectively) a public good, free to anyone who would use it. Low prices of inputs creates overutilization of cars for daily commuting. Car pools are underemployed due to imperfect information and transaction costs; people have difficulty getting together. Thus a single environmental problem may be the result of several market failures.[32]

1. The Proposal: The Environmental Permit Program is a framework for management of environmental issues affected by new construction.

A. Development of standards

The CEP Director would investigate the full range of environmental issues which might be considered under the new

permit and would prepare a list of issues for further consideration based on the following criteria:

- the problem is an undesirable environmental or resource effect of new construction or development caused by market failure[33]; or
- the benefits of regulating the problem outweigh the likely costs of compliance; or
- the problem is of extraordinary public interest;
- the problem is already regulated by the City, and inclusion in the permit would ease compliance or improve administrative efficiency.

The CEP Director would report findings to an ad hoc Citizen's Commission consisting of interested residents, members of the development community, and representatives of the Departments of Community Development and Inspectional Services. The Citizens' Commission would:

- review the Director's findings;
- based on its review, recommend standards for new construction;
- make recommendations concerning the appropriate scope of these standards, ie: to what types of construction would they apply.

In the course of its findings,the Citizens' Commission would consult with the following: Cambridge Conservation Commission, Planning Board, and Departments of Public Works (Recycling Coordinator and City Arborist), Traffic and Parking, Health and Hospitals, Water, and Fire, and other interested City agencies.

The Citizens' Commission would transmit its recommendations to the City Council. Contingent on Council approval, standards would be incorporated into the permit process.

B. Simplified procedures for environmental, building, zoning permit processes

The Citizens' Commission would also recommend procedures for simplifying the overall construction permitting process - including the environmental permit, building and zoning - with the aim of approximating a one-stop permitting process.

C. Environmental permit process

The permitting process would be administered by an Environmental Permit Review Committee, consisting of the members of the Environmental Impact Response Committee (see p. 18), plus representatives of the Departments of Inspectional Services, Community Development and the Planning Board.[34] The Committee would:

- review permit application to determine whether an application complies with permit standards;

- furnish technical assistance to permit applicants;
- periodically recommend changes in permit standards.

Developers participation in the Environmental Permit Program would be voluntary. Developers willing to submit projects would be eligible for simplified permitting procedures (see part B). The Committee would also forward exemplary project designs to the Citizens Advisory Committee on Environmentally Desirable Practices or similar excellence recognition program.

D. Council Review

Two years after the enactment of permit standards, the City Council would review the Environmental Permit Program to determine the following:

- Should the permit be made mandatory?
- Should the overall simplified permitting procedures for environmental, building, and zoning permits be expanded and/or available to all projects?
- Should the permit standards be revised?
- What are the program's staffing and resource requirements, and how could these be met?

The following is list of areas on which new construction standards might focus. It is purely for illustrative purposes. But it demonstrates the potential versatility of this approach and should suggest the need for inter-departmental coordination in a successful program.

Construction and demolition: Procedures to limit construction noise in accordance with Municipal Code, chapter 8.16.070 and a plan for the recycling of construction and demolition wastes which conforms to standards set in cooperation with DPW.

Conservation: Project designs which include energy and water efficiency features conforming to Best Available Efficiency Technology or Most Efficient Design standards developed by the CEP and Water Department.

Water supply: Compliance with Water Department policy on cross-connections into the water supply.

Toxic chemicals: A statement of sources of toxic chemicals from the project's planned use and any on site storage facilities, conforming to state and federal regulations, the standards of the Fire Department and the Toxic Generators program of the Office of Integrated Waste Management.

Pollutant discharge: An assessment of the effects on the environment, and measures taken to comply with state and federal laws governing discharge of waste water or airborne

discharge of pollutants from the project's planned use.

Ozone protection: Use of insolation and removal of CFC's from previous structures on the site before demolition, in compliance with Municipal Code, Chapter 8.48.040, the ozone protection ordinance.

Trees: Planned landscaping and any necessary relocation or replacement of older trees, according to standards set by the Planning Board, Arborist and Committee on Public Plantings.

Traffic and parking: An assessment of likely traffic impacts, and a commuter service plan to meet alternative transportation targets designed by Community Development.

Recycling: The building's suitability for solid waste recycling, including specific design features intended to facilitate recycling, designed by DPW and the CEP technical assistance staff.

Wetlands: Impact on wetlands, and where appropriate, a copy of the Order of Condition issued by the Cambridge Conservation Commission and design changes instituted to comply with the order. Also, the effect of the project on public access to waterways and shorelines, and where appropriate, a discussion of measures taken to comply with M.G.L. c.91, according to procedures set up by Commission.

2. Expectations for the proposal: Each of the groups involved in the current building and zoning systems or advocating change has different expectations about how an environmental permit program should work, what authority it might have, and what its aims should be. Constituents include residents, the development community, the City leadership, and City departments, boards, and commissions potentially involved in the permit process.

Through groups such as Cambridge Citizens for Livable Neighborhoods and Citizens Against Rising Rates of Toxicity, a diverse group of residents from Lechmere to Brattle Street have expressed similar desires with respect to environmental control of new development. They are concerned about the external costs of development to quality of life in their densely populated city. Some are asking

for increased control over the size, shape, and nature of new construction in their neighborhoods. They want a voice for their suggestions for mitigating specific impacts of development. Because many urban environmental issues are quality-of-life rather than health related, citizen involvement is a necessary input in determining what the problems really are.

Developers want to achieve maximum development potential and minimize project costs. Maximum development potential implies that environmental requirements not overly restrict the type, size, bulk, or scale of planned developments. Of course, developers would also prefer more flexibility in zoning requirements than they get from the current zoning process. The primary costs of the permit process which concern developers are those related to time and uncertainty. Because developers, particularly on larger projects, operate with borrowed money on which they must pay interest, the longer the permit process takes the more expensive the project becomes.[35] The issue of uncertainty is problematic partially because it contributes to the possibility of project delays. Designers cannot finalize their plans in an atmosphere of uncertainty concerning project requirements. With uncertainty there is also the potential for a very costly redesign of the project. Uncertainty makes it more difficult or expensive for developers to secure financing. Uncertainty leaves developers unable to forecast their likely costs and determine the overall viability of projects. To developers would also fall the costs of producing the permit document itself. Developers abhorrence of the EIR process is understandable. EIR's consume tremendous amounts of time and energy. They have been known to drag on for months or years without completion. The EIR essentially requires that the expensive and time consuming design work be done before public comments are solicited. These comments come late in the process,are apt to be negative and their implications costly to retrofit on the developer's design. Developers do not want a local MEPA but rather a process which does not significantly add to

permitting time or uncertainty about approval.

The City leadership's interest in an Environmental Permit Program stems from its responsibilities to protect the public health, safety and welfare from physical threats and threats to quality of life resulting from new construction. However, the City has other goals, including maximizing housing and commercial opportunities for residents and accommodating growth. Also, the Environmental Permit must ensure due process and equal protection. The City is additionally concerned about minimizing the costs of administration and avoiding litigation.

Individual City departments, boards and commissions hope to use the Environmental Permit Program to increase their control over developers. In most cases, this would be through a more precise definition of the compliance process. The Department of Health and Hospitals, for example, could use the process to bring more developers into compliance with existing laws governing the use of ozone depleting foam insolation.[36] In a few instances, agencies hope to use the permit process to increase regulatory authority. The Committee on Public Plantings sees the opportunity to upgrade its voluntary landscape review to a mandatory process.

2. Evaluation Criteria: In accordance with these expectations, a successful Environmental Permit Program would have the following criteria.

A. Give voice to residential concerns about the nature of development in Cambridge.
B. Not significantly increase project review time.
C. Be integrated with existing permitting processes.
D. Minimize project uncertainty.
E. Minimize compliance costs.
F. Minimize effects on housing, commercial, and industrial opportunities in Cambridge.
G. Provide incentives for compliance.
H. Ensure that City agencies retain control of current environment-related permit responsibilities.
I. Minimize the City's administrative and legal costs.

4. Evaluation of the Proposal:

A. Would the proposal give voice to residential concerns? The proposal attempts to account for residential concerns primarily during the process of developing the environmental standards. Extensive public involvement at this stage is expected, both through the Citizens' Commission and through community meetings and fora organized by the CEP Director.[37] At the permit review stage, citizen representation would be limited to participation of the Conservation Commission and the Planning Board on the Environmental Permit Review Committee. There is no specific provision in the proposal for involvement of neighborhood representatives on the Permit Review Committee. Neighborhood representatives could define more precisely the important quality-of-life concerns about a specific planned building, and often have cost-effective suggestions to remedy their concerns. Neighborhood involvement would also facilitate communication with the developer. As such, the City should be ready to facilitate neighborhood-developer meetings. But neighborhood representatives might also elevate their own concerns at the expense of the City's overall goal of providing sufficient housing and business opportunities. Timely selection of technically qualified neighborhood representatives would present serious difficulties.[38] Moreover, the desire for neighborhood representation on the Permit review Committee overlooks the fact that it's main function - determining whether project proposals meet pre-set standards - is technical and objective in nature.

B. Would the proposal significantly increase project review time? This criterium and the two that follow address themselves to the primary factors which could increase the costs of development in Cambridge or actually decrease its supply: review time and uncertainty. By integrating the environmental permit with a simplified overall permitting process, the proposal aims to hold review time constant, or even reduce it. The proposal avoids lengthy public comment periods and extensive reporting requirements. The use of clearly defined standards specific to

environmental issues rather than general statements simplifies the job of permit review.[39] The proposal is most definitely not analogous to the state's EIR process.

C. Is the proposal consistent with existing permitting processes? In many ways the proposal is a cross between the processes of zoning and building code regulation. So long as the environmental permit is voluntary, any overlap should not be a problem. Through the development of a simplified overall permitting process the Citizens' Commission would address forthrightly the question of how the various permit systems should be integrated.

D. Would the proposal minimize developers' uncertainty? Along with delay, uncertainty is the principle way in which a poorly designed environmental permit could increase developers' costs. This proposal minimizes uncertainty through the use of clearly defined standards for new construction, as apposed to broad categorizations or a subjective community review. The standards may be driven by concerns for environmental effect, ie: the effect of the project on air pollution. But the standards themselves should tell developers what they must do to comply, ie: develop a commuter assistance plan adequate to carry 50% of the project's eventual daily work force.[40]

E. Does the proposal lead to substantial compliance costs? The proposal may still increase costs, particularly the costs of environmental amenities necessary to meet the standards and the costs of compliance itself. For developers, compliance comes down to dealing with a relatively simple checklist of things to do. Many lending institutions already require documents similar to the permit application envisioned in this proposal. Incremental costs of compiling the permit would be minimal. Though environmental amenities necessary for compliance would cost money, these costs would be minimal compared to likely retrofit costs.

F. Would the proposal minimize effects on housing, commercial, and industrial opportunities in Cambridge? By satisfying the previous three criteria the proposal would not significantly increase the supply costs of developed property in Cambridge. It would thus appear to have little impact on housing, commercial, or industrial opportunities. In addition, demand for many kinds of developed property in Cambridge is relatively inelastic, unlikely to be upset by relatively small cost increases.[41] Owing to the presence of Harvard and MIT, Cambridge has tremendous advantages over potential substitute locations in the commercial, office, high-tech, biotechnology, and certain housing markets. Abutment of the Charles River also makes Cambridge attractive to the luxury housing market. Another advantage is extensive MBTA Red and Green Line service.[42] And of course, from an environmental perspective, Cambridge is already a relatively pleasant place to live and work. Put simply, people want to live and businesses want to locate in Cambridge.[43] Any costs incurred through compliance with the proposed permit would not likely deter them. Note that, in this analysis of demand, the benefits of environmentally sound construction have not yet been counted. Improvements in environmental quality, and particularly environmental amenities, do translate into increased property values.[44] Analytical techniques and data constraints prevent quantitative estimation of the size of the effect. But improved environmental quality may increase demand for developed properties in Cambridge sufficient to outweigh the increase in supply costs.

G. Does the proposal provide incentives for compliance? The proposal envisions the simplified overall permitting process as incentive to participate in the Environmental Permit Program. The simplified process would offer developers tangible benefits in terms of decreased permitting time and expense. Additional incentive could come through recognition of outstanding project designs through the Citizens Advisory Committee on Environmentally Desirable Practices. In some cities examined for this study,

increased flexibility in zoning standards was used as an incentive for compliance with environmental standards.[45] This option might undermine the overall goal of the environmental permit, and in any case, is well beyond the scope of this study. However, the proposal does call for participation by members of the Planning Board in the Environmental Permit Review Committee, in part so that they might be aware of which projects seeking variances had made an effort on behalf of environmental concerns.[46]

H. Would City agencies retain control of current environment-related permit responsibilities? The proposal does not require that agencies with current environmental permitting responsibilities - such as the Conservation Commission on wetlands, the Water Department on cross-connections to the water system, and Traffic and Parking on parking spaces[47] - in any way relinquish those responsibilities. On the contrary, in those cases where permits already exist the role of the Environmental Permit Program would be to coordinate and ease compliance, rather than to develop new permitting standards. Through their representatives on the Environmental Permit Review Committee, these agencies would retain the power to grant or deny their particular permit. Consider the example of the Conservation Commission. To simplify the process for project proponents, wetlands and waterways related documents could be incorporated into the Environmental Permit. The Conservation Commission would set the specific requirements for those documents and retain the sole authority to pass judgment on them. If an Order of Conditions[48] were issued, the project would not receive an Environmental Permit until revised designs had been submitted.

I. Would the proposal entail significant administrative and legal costs for the City? Unquestionably, implementation of this proposal would bring on administrative and legal costs to the City. So long as the system is voluntary, these costs are unlikely to be recovered. Under a mandatory system, a sliding-scale fee similar

to those used by Inspectional Services for various building permits could be used to cover administrative costs The initial voluntary permit process poses little risk of substantial legal challenge.[49] On a mandatory permit, the City can avoid continuing litigation by careful legal analysis during the development of permit standards.[50] Thus, the significant additional costs imposed by this program would be up-front costs. Cooperation with business and effective use of local legal and analytic experts as volunteers on the Citizens' Commission will help to lower these costs.

Environmental Permit Process
Development of Standards

City Manager / Executive Department

CEP Director

The CEP Director would investigate the full rnage of potential permit issues, and prepare recommended permit standards based on: market efficieny, public concern about the problem, or administrative / enforcement convenience.

The CEP Director would report her findings to an ad hoc Citizens' Commission of concerned residents, representatives of the development community, and of the Departments of Community Development and Inspectional Services. After reviewing the findings of the CEP Director, the Commission would have the task of developing permit standards for new construction. The Commission would consult with the relevant operational departments and boards.

The Commission would also develop a simplifed overall permitting process for all construction related permits.

Ad Hoc Citizens' Committee

Operational Departments

City Council

Permit standards and other Commission recommendations would be subject to Council approval after which they would be part of the permit process.

Appendix A:
Overview of Constituents
of Cambridge Environmental Program

The constituents of an organization are the persons or entities who will expect to the organization to provide some kind of service to them. Constituents are divided into overseers and stakeholders. The person or entity to whom an organization is responsible is its overseer, while other parties with expectations of the organization are stakeholders. This general list of the likely constituents of environmental programs in Cambridge is offered for the purposes of overview and definition. Each substantive section of this report includes a more detailed discussion of the specific constituents of the proposal under consideration.

The Executive Department (City Manager): The City Manager is the Chief administrative officer of the City, and is responsible for the administration of all City departments and services, the enforcement of all City Laws and ordinances, and the annual budget. The City Manager both recommends policies and programs to the City Council and implements Council decisions.

The City Council: The Council is the governing legislative body of the City. It sets general policy direction and passes specific ordinances. It also gives direction on various matters to the Executive Department.

Operational Departments: The departments act at the direction of the Executive Department. Those which play key roles in environmental protection include: Community Development, Fire, Emergency Management, Health and Hospitals, Inspectional Services, Public Works and Water.

Boards and Commissions: The many boards and commissions allow citizens to participate directly in municipal government. Some, such as the Water Board, Planning Board and Conservation Commission, have substantial authority within delineated areas of governance. Others, like the Committee on Public Plantings, exercise advisory powers.

Citizens of Cambridge: The impetus for local environmental protection measures has come largely from informed and active citizens. The need for public vigilance will not end once new laws have been passed. On the contrary, new environmental rules will only be effective if they are taken seriously. It should be remembered, however, that a large portion of the population has expressed no interest in or understanding of environmental issues.

The Regulated Community: These are the persons affected directly by a particular piece of legislation. Environmental legislation is generally thought of as aiming to regulate the affairs of business: developers, merchants and research firms, for example. The city's educational institutions are part of the regulated community.

State and Federal Regulators: Cambridge works closely with the Massachusetts Department of Environmental Protection (DEP) and the Executive Office of Environmental Affairs (EOEA) including the former Department of Environmental Management, as well as the United States Environmental Protection Agency (EPA).

Neighboring cities and towns: With regard to many environmental issues, the City and its neighbors are mutually dependent. Particular attention should be given to towns in the Cambridge Watershed area: Lexington, Lincoln, Waltham, and Weston.

Appendix B:

Selected Letters

Cambridge Citizens for Liveable Neighborhoods Inc.

P.O. Box 19, Cambridge, MA 02238 / (617) 354-5670

Wednesday, December 26, 1990

Coordinating Committee

Jennie Bush
*Rich Cowan**
*Philip Dowds**
*Nancy Downer**
*Bob Edbrooke**
*Dan Geer**
Walter Grant
Peter Kinder
*Debra McManus**
*Priscilla McMillan**
Hugo Salemme
Henry Shawah
*Anne Toop**

**And Director*

COUNCILLOR FRANCIS H DUEHAY
26 Lowell Street
Cambridge, MA 02138

Dear Frank:

Thank you for including us on the review list for the draft of Jon Kessler's report, "THE CAMBRIDGE ENVIRONMENTAL PROGRAMME". We find it to be thoughtful, thorough, well-written, and most important, persuasive. In general, we are won over by the basic arguments:

— That environmental protection is an objective sufficiently important and complex (both technically, and in terms of setting / balancing priorities) that it deserves a municipal department dedicated to the mission.

— That the Cambridge Environmental Program (CEP) will function best in a advisory, coordinating and support capacity to other existing Departments, rather than having operational or regulatory responsibilities of its own. And,

— That the environmental permit program, MEPA responses, and departmental enhancements described all sound fundamentally worthwhile.

We could make detailed comments about the technicalities or language choices of this report, but we suspect you and Mr Kessler are getting plenty of good advice at that level from other reviewers. Instead, we want to go straight to what we see as the key issue: The factors that will make the CEP a success and national model, rather than just one more tedious bureaucracy.

You and we both know that City Hall has some important jobs which are held down by routine-oriented people; and also that some good people are, for political and administrative reasons, sometimes kept on a short leash (until they decide to leave). The CEP, in our view, cannot function as a "business as usual" department; it has to be a department willing to make waves. Without waves, environmental protection will take a back seat to almost every other concern, and for exactly the reasons that Mr Kessler details so lucidly on pages 10 through 13 of his draft.

Making waves does not mean creating controversy just for the sake of controversy. It does mean: confronting tough issues and difficult choices in public; refusing to accept less-than-perfect information as the excuse for inaction; and straightforward acknowledgement that the important

CCLN

Frank Duehay
12/26/90

benefits of environmental protection will be accompanied by important costs. Factors which will contribute to making the CEP important and effective will include things like:

— An Aggressive Director. The Director the City hires must be something of a crusader, someone who believes deeply in the importance of environmental protection, who's ready to advocate the cause, and who can mobilize public opinion somewhat outside the play-it-safe constraints that sometimes characterize the behavior of public bureaucracies. This may not be the kind of person that City government has a natural inclination to hire — but (within limits) it's the right kind of person for this job.

— Enforcement of Inter-Departmental Cooperation. We've all seen instances where City departments choose to act solely on their own priorities, paying scant attention to the mission or requests of other departments, or to the complexity of legitimate goals the City has adopted. The Manager and the Council must be prepared to make clear to all the line agencies that cooperation with the CEP is a top priority.

— Political Courage. If the CEP Director is doing his/her job right, he/she will be before the Council several times a year with a tray of political hot potatoes: material which is technically complex, choices which are not obvious, policies which have price tags attached, and issues which divide the voting constituency in ways hard to control or predict. The parking freeze is a classic example of an environmental protection hot potato, but it is hardly the last one the Council will see in the 90s. If you, as Councillors, are serious about the CEP, then you must be serious about accepting and supporting a Director who makes your job more interesting.

CCLN strongly supports an initiative like the one outlined by Mr Kessler; we thank you, the Manager, and all others who've taken the time to break ground on this terrain. Please feel free to contact us if we can help with implementation, or if you'd like our comments re details of the report.

CCLN Inc

R Philip Dowds
Director

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

Office of Technical Assistance
(formerly the DEM Office of Safe Waste Management)

MICHAEL S. DUKAKIS
GOVERNOR

JOHN DEVILLARS
SECRETARY

December 3, 1990

John Kessler
Office of City Manager
Cambridge City Hall
795 Massachusetts Avenue
Cambridge, MA 02139

Dear John:

I am writing to commend you for a clear and comprehensive report concerning the initiatives Cambridge may take to respond to mounting environmental concerns.

Some of the key points are vital indeed. Early identification of where action is necessary is a wise policy. It is also in line with the new thinking at EPA and among environmental organizations. Long-range planning and policy development seem like time consuming tasks but Cambridge will benefit from such activities for decades.

Establishment of new officers and giving them responsibilities that will help coordinate activities across city agencies is part of the evoluation of environmental progress. Up until now it has been easy to regard environmental protection as a side light. It must become central.

Let me especially commend you for proposing the provision of technical assistance to regulated businesses and the public. For too long environmental protection has been bought at the cost of good will. People have been forced into what is really best for them, and for us all. Because so much of what is necessary to gain real environmental progress goes hand in hand with improvements in efficiency and general practices, it is time for government to play the role of helping polluters to help themselves. This recasts the drama so that the players are not at war, but are working together to achieve common goals.

I think that Cambridge is in a position to capture the attention of the country, if not the world, if it implements the proposals you have outlined. Just think - an environmental impact process that has some teeth!

You can count on my active support for this plan. Rick Reibstein

Rick Reibstein, Esq.

100 CAMBRIDGE STREET BOSTON, MA 02202 (617) 727-9800

100% RECYCLED PAPER

KENNEDY INTERIORS
57A BREWSTER STREET • CAMBRIDGE
MASS. 02138 876-7553 354-2560

January 21, 1991

Jon Kessler
Office of the City Council
City Hall, Cambridge, Ma 02139

Dear Jon:

It was good to be able to discuss with you the first draft of your proposal on environmental management for the City of Cambridge.

I agree with you that the City needs an environmental advisor/coordinator--someone who can keep the City government and its agencies up to date on state and national environmental issues, who can help City agencies deal with state and federal agencies, who can create a forum in which City agencies can exchange ideas and solutions to environmental problems, and who can report regularly to the City Manager on what progress is being made. But I think this person should have an advisory role, not a decision-making one.

It is my belief that final decisions should be left to the agencies that must carry them out, or, if conflicts arise, to the City Manager and the City Council.

Additionally, I think it is important to keep the way open for citizen participation. Environmental issues are universal issues. Popular interest is rising but much needs to be done in education and in building enthousiasm and cooperation for conservation measures. Volunteers are a valuable source of experience and enthousiasm. People will give generously of their time as long as they can see that what they do matters.The environment is an issue that matters to us all. If the City wants our help, it must make sure that the way stays open for volunteers to participate in the formation and management of the City's environmental policy.

Sincerely,

Mary B. Kennedy

Mary B. Kennedy, Chairman
Cambridge Committee on Public Planting

cc Francis Duehay
Robert Healy

Appendix C:
Demonstrating Commitment to the CEP
Proposals for the City Leadership

The City leadership can take steps to bolster operational departments' commitment to the Cambridge Environmental Program and environmental quality in general. In the past, elected officials did not think they could trust operational departments to do the right thing, so they created an additional layer of bureaucracy to watch over operations. Administrative rules aimed at environmental protection have been enforced at the expense of agency good will. City officials at all levels have been vituperative in their criticism of this approach.[51] Empowering the Cambridge Environmental Program is a viable alternative. The following proposed actions draw from the experience of corporations and government agencies attempting to instil a quality ethic in their organizations.

Role of the City Council

Though City Council will send a strong message simply by creating the CEP, it cannot content itself simply to pass legislation. Council members must take a lively interest in the activities of the CEP. The presence and active participation of Council members would send a powerful message to City agencies, local institutions, and residents. So too would their absence.

Set a Dramatic Goal: Goals for the CEP should be set in terms of individual participation. This report recommends the following:

> The Cambridge Environmental Program shall make every effort to carry its mission to at least 50% of City employees during its first year of operations, and 100% within two years.

Participation by City employees in CEP programs should reasonably

gauge the scope of CEP efforts to date. Most importantly, the 100% goal tells every City employee that she will be a part of the CEP.

Promulgate a Cambridge Environmental Quality Policy: The importance of policy statements is both overestimated and understated. On the one hand, hortatory policy statements alone accomplish very little. However, debate over policy statements forces City leaders to visit the broad questions of environmental quality. Are we preserving the environment for humans or for its own sake? Who judges the adequacy of our efforts? How should environmental goals relate to the other core values of government? The policy statement should convey the answers to such questions.[52] While emphasizing the need for some serious thought and discussion of the policy statement, this study offers the following as a starting point for debate:

> Providing a safe, pleasurable physical environment is among the basic objectives of Cambridge City government.

This statement says far more than one might think. It suggests a dual standard for measuring environmental quality, including (1) objective product-based health and safety standards, and (2) subjective, value-based measures based on the sentiment of citizens. Establishing environmental quality as a basic objective of the City implies that any decision which compromises the objective should be thoroughly scrutinized, and perhaps that environmental quality should be sacrificed only for one of a limited number of basic objectives.

Make Environmental Quality Everyone's Responsibility: Individuals at all levels of City government have the ideas and energy to take action on environmental quality. Those who take the initiative should not be made to feel that they are not doing their job. On the contrary, if environmental quality is among the basic objectives of Cambridge City government," then pursuance of environmental quality is the job of every City employee. To send this message to employees and their supervisors, improvement of

environmental quality should be added to all formal job descriptions, from the City Manager to Clerk/Typists.

Spearhead participation in CEP programs: In nearly every successful case studied, corporate or government leaders demonstrated their commitment to quality programs by their early participation.[53] By participating in CEP's educational efforts and other projects the elected leadership will show that it is willing to donate the precious commodity of time to the attainment of environmental quality. Furthermore, the elected leadership will share with each other, with City employees, and eventually with persons from the private sector, an understanding of jargon, tools, and philosophies of environmental quality.[54]

Consider Environmental Impacts of Council Decisions: The Council will not easily convince City employees or residents that environmental quality is more than the "flavor of the month."[55] Only when Councilors begin to consider the environmental effects of all manner of policy decisions, just as they would public safety or economic welfare effects, will subordinates and the public really take notice.[56] The CEP can assist the Council by conducting policy analysis to determine the likely environmental effects of proposed actions.

Role of the City Manager

The City Manager brings distinct assets to the process of creating a commitment to the objectives of the CEP. Departmental staff seem to identify with their boss. Because the current Manager has a reputation for level-headedness, his visible support would lend needed credibility to environmental quality. He could put to rest, for example, the notion that environmental quality is something only for "politicians and yuppies" to worry about."[57]

Communicate the Cambridge Environmental Quality Policy to City Employees: The first step of communicating the Council's policy decisions should not be taken lightly. If done thoughtfully and creatively, the commencement of the CEP offers a brief opportunity to introduce a large number of City employees to environmental quality.

Participate With Elected Leadership in CEP Programs: This study has already pointed to the real and symbolic importance of visible participation by City leaders in CEP programs. The City Manager's time and attention is perhaps more scarce than the Council's, making his visible role a doubly powerful symbol.

Incorporate Environmental Planning into the Annual Budget Procedure: The most successful quality programs in business and government are marked by integration of quality goals into the organization's strategic decision making process.[58] The City sets annual goals and objectives through preparation of the Annual Budget.[59] The incorporation of environmental quality goals into the annual budget and planning procedure[60] would demonstrate the City Manager's intent to take the Cambridge Environmental Quality Policy seriously, particularly the idea that environmental quality is part of everyone's job. For obvious reasons, the departments place high priority on the budget and planning process. They will surely regard a substantive addition to that process as significant. Second, Departments would be led to search for the nexus of environmental quality and their own programmatic objectives. The proposed action would prompt departmental managers to reach down to individuals at lower levels of the bureaucracy for environmental quality ideas. Employees would view the adoption of their ideas within the City's primary strategic planning document as positive recognition of their efforts. Third, the departments' annual environmental quality goals and objectives would give the CEP a good idea of where it should focus future educational, policy analysis and technical assistance efforts. CEP staff would also

have the opportunity to sell their services to the departments by presenting ways in which the CEP might help department heads meet environmental quality objectives.

The following procedure is modeled on the 1990-91 budget procedure. The idea is to create a congruence between environmental quality and other types of planning. As the budget and planning process changes, so too would the environmental quality planning process described here.

At each budget cycle, the CEP would assess environmental quality in Cambridge, focusing on outstanding problems, emerging needs, and new opportunities for improvement.

CEP staff would meet with the City Manager to review findings and establish general guidelines for the departments to use in setting environmental quality goals.

In congruence with the budget process, the City Manager would convene a session attended by all the department heads, planning staff, and CEP staff, to outline the guidelines dictating the preparation of individual department's environmental quality goals and objectives.

In consultation with the CEP, each department would prepare a summary outlining the past year's achievements and projected goals for the future with regard to environmental quality.

Departments would be encouraged to set goals through an inclusive process: measuring public satisfaction with current environmental quality; and drawing on the ideas of employees and civic participants.

To the extent that future goals would require additional funding, decisions would be made through the regular budget process. Proposed program changes for the coming year that relate to environmental quality would be reviewed by the City Manager within regular budget meetings.

The CEP would assist the Budget staff in finalizing departments' environmental quality program statements for inclusion in the annual budget.

An Ordinance to Create

protection ordinance Cambridge Environmental Program

In amendment to an ordinance designated as the "Cambridge Municipal Code."

Be it ordained by the City Council of the City of Cambridge as follows:

Chapter 2 of the Code (Administration and Personnel) shall be amended as follows:

Chapter 2.22.01 of the Code, entitled "Created- Management and Personnel," subsection A.1. shall be amended to include:

- Environmental Program.

New Chapter 2.114, "Cambridge Environmental Program," shall be created as follows

Chapter 2.114

Cambridge Environmental Program

Sections:

2.114.010 Cambridge Environmental Program - Establishment - Mission.
2.114.020 Cambridge Environmental Program Director - Appointment - Term - Powers and duties - Civil service and tenure rights - Compensation.
2.114.030 Mission Statement.

2.114.010 Cambridge Environmental Program - Establishment

There is hereby established in Cambridge a Cambridge

Environmental Program (CEP). At the discretion of the City Manager, the CEP shall be the focal point for efforts to improve the quality of the physical environment of Cambridge. The CEP shall be contained within the Executive Department (as defined in Code Chapter 2.22.010.

2.114.020 Environmental Program Director - Appointment - Term - Powers and duties - Civil Service or tenure rights - Compensation.

1. The Cambridge Environmental Program shall be under the control of the Environmental Program Director, who shall be an assistant to the City Manager.

2. The Environmental Program Director shall be appointed by, and serve at the discretion of, the City Manager.

3. The powers and duties of the Environmental Program Director shall be such as are designated and assigned from time to time by the City Manager. The Environmental Program Director shall have all the powers, rights, and duties that the City Manager shall determine as are necessary, consistent with the powers and duties assigned by the City Manager.

4. The Environmental Program Director shall have no rights under civil service, nor acquire any rights of tenure in any manner. The Environmental Program Director shall receive as annual compensation the same amount set forth in Chapter 2.62.010, subsection 4 (category IV).

2,114,030 Mission Statement

It is the mission of the Cambridge Environmental Program to increase the City's ability to exercise leadership on environmental issues. The office would assist the City Manager by: formulating and communicating environmental norms, policies and standards; assisting operational departments' compliance efforts; transmitting feedback to all concerned about the results of efforts to improve environmental quality; recognizing those who make progress, and devising remedies for those who fail to live up to the expectations of the City Manager.

Furthermore, amendments to the Code which concern themselves with environmental issues may henceforth be contained in new Title 17 of the Code, "Environmental Quality."

An Ordinance

The Cambridge Environmental Quality Policy

In amendment to an ordinance designated as the "Cambridge Municipal Code."

Be it ordained by the City Council of the City of Cambridge as follows:

Title 17 of the Code (Environmental Quality) shall be amended as follows. New Chapter 17.04.010, "Cambridge Environmental Quality Policy," shall be created as follows:

Chapter 17.04

Cambridge Environmental Quality Policy

Sections:

17.04.010 Cambridge Environmental Quality Policy
17.04.020 Purpose of the Cambridge Environmental Quality Policy
17.04.030 Job descriptions
17.04.040 Effect on other actions

17.04.010 The Cambridge Environmental Quality Policy

Providing a safe, pleasurable physical environment is among the basic objectives of the City of Cambridge.

17.04.020 Purpose of the Cambridge Environmental Quality Policy

The purposes of the Cambridge Environmental Quality Policy are to clearly establish environmental quality as an aim of the City of Cambridge; to give general guidance on what is meant by the phrase

"environmental quality"; and to guide policy designed to improve environmental quality.

17.04.030 Job descriptions

It is hereby recognized that fulfillment of Chapter 17.04.010 is a basic responsibility of the City of Cambridge, its employees, agents, and designated contractors.

17.04.040 Effect on other actions

Nothing in this Title shall preclude or prejudice any action by any branch or agency of the City government at any time to protect the environment or conserve natural resources. Nor shall anything in this Title preclude or prejudice any future regulatory action by the City if a regulatory approach is deemed necessary and appropriate to achieve the goals of this Title.

A Resolution

in Support of a City-Wide Commitment to Environmental Quality

Whereas, the creation and maintenance of a city-wide commitment to environmental quality is the first and most critical element of a successful strategy for improving environmental quality; and

whereas, demands for strict environmental regulation can be avoided only through demonstration by City leaders of a profound commitment; and

whereas, Creating a city-wide commitment to environmental quality requires attitude changes at all levels of city government; and

whereas, high level involvement has been shown to be essential in establishing such a commitment; and

whereas, the presence and active participation of elected and appointed City leaders in environment related functions would send a powerful message to city employees, local institutions, businesses, and residents of the City of Cambridge;

therefore, be it resolved by the City Council of the City of Cambridge as follows:

1, That members of the City Council of the City of Cambridge shall whenever possible make themselves available to participate in educational and other efforts of the Cambridge Environmental Program.

2. That the leadership of the Executive Department is hereby encouraged to participate with the elected leadership in these programs in so far as it is able.

3. That the City Council shall in the future make every effort to ascertain the environmental impacts of pending council decisions.

4. That the City Manager is hereby encouraged to develop creative means of communicating the Cambridge Environmental Quality

Policy and the mission of the Cambridge Environmental Program to City employees.

An Ordinance

To Bring About Environmental Goal-Setting

in the Annual Budget and Planning Process

In amendment to an ordinance designated as the "Cambridge Municipal Code."

Be it ordained by the City Council of the City of Cambridge as follows:

Title 17 of the Code (Environmental Quality) shall be amended as follows. New Chapter 17.08, "Environmental Planning," shall be created as follows:

Chapter 17.08

Sections:

17.08.010 Purpose
17.08.020 Non-interference with budget process
17.08.030 Annual environmental quality assessment
17.08.040 Departmental goal-setting
17.08.050 Inclusion in the annual budget report
17.08.060 Malleability

17.08.010 Purpose

The Procedure outlined in this Chapter is modeled on the budgeting procedure currently in use in the City of Cambridge. The intent is to create confluence between environmental quality planning and goal-setting, and other types of planning.

17.08.020 Non-interference with budget process

1. Nothing in this Chapter should be interpreted to preclude,

prejudice, or in any way regulate the formal budget making process as outlined in Title 3 of the Code.

2. Nothing in this chapter should be interpreted to call for usurpation or oversight of any kind of the prerogatives of the Assistant City Manager for Fiscal Affairs or his/her staff by the Cambridge Environmental Program.

3. Nothing in this Chapter should be interpreted to call for usurpation or oversight of any kind of the prerogatives of the various boards or officers in charge of departments or their staffs by the Cambridge Environmental Program.

17.08.030 Annual environmental quality assessment

1. At the beginning of the annual budget cycle, the Environmental Program Director shall prepare an overall assessment of environmental quality in Cambridge, focusing on outstanding problems, emerging needs, and new opportunities for improvement.

2. The assessment shall be submitted to the City Manager no later than _____.

17.08.040 Departmental goal-setting

1. The City Manager shall review the findings of the assessment, and establish general guidelines for use by city departments in setting environmental goals.

2. During the month of _____, the City Manager shall convene a session attended by all department heads and other persons deemed relevant by the City Manager to communicate the findings of the

annual environmental quality assessment, and to elaborate on guidelines for preparation of environmental goals for the next year.

3. Each department shall prepare a summary of the past year's environmental quality achievements and goals for the coming year. Summaries shall be submitted to the City Manager no later than _____.

A. Departments are encouraged to consult with staff of the Cambridge Environmental Program.

B. Departments are encouraged to set goals through an inclusive process based on public satisfaction with current environmental quality efforts.

C. Departments are encouraged to draw on the ideas of their own staff through the use of Environmental Quality Teams.

4, Any necessary funding to achieve environmental quality goals shall be pursued through the established budget process.

17.08.050 Inclusion in the annual budget report

The staff of the Cambridge Environmental Program shall provide assistance to the Budget office in finalizing departments' environmental quality program summaries for inclusion in the annual budget report.

17.08.060 Malleability

The procedure described in this Chapter assumes the current (FY '90) budget making process. The City Manager may, at his

discretion, modify the procedure described in this Chapter to bring the environmental goal-setting process in line with any future changes in the budget making process.

An Ordinance

to Promote Effective City Participation in Environmental Impact Reviews

In amendment to an ordinance designated as the "Cambridge Municipal Code."

Be it ordained by the City Council of the City of Cambridge as follows:

Title 17 of the Code (Environmental Quality) shall be amended as follows. New Chapter 17.24, "Environmental impact response," shall be created as follows.

Chapter 17.24

Sections:

17.24.010 Purpose
17.24.020 Environmental impact response coordinator - Designation - Powers and duties
17.24.030 Environmental impact response committee
17.24.040 Committee membership
17.24.050 Powers and duties of the committee
17.24.060 Effect on other actions

17.24.010 Purpose

This Chapter deals with the need for the City to participate effectively in state Environmental Impact Reviews and federal Environmental Impact Statements, collectively referred to as Environmental Impact Reviews (EIR's). The City takes part in EIR's

to learn about the potential impacts of impending projects, and to influence the decisions of state or federal regulators with regard to those projects.

This Chapter establishes a standard operating procedure for EIR participation in order to amplify the voice of the City of Cambridge within the EIR process.

17,24.020 Environmental impact response coordinator - Designation - Powers and Duties.

1. The internal environmental consulting service described in Chapter 17.16 of the Code, and under the jurisdiction of the Cambridge Environmental Program, is hereby designated as the environmental impact response coordinator.

2. Duties of the coordinator would include the following;

A. monitoring the activities of the state and federal governments, and private parties including major developers, which may have an environmental impact on Cambridge in order to identify potential subjects for EIR's at the earliest possible state;

B. Monitor submissions to the Massachusetts Department of Environmental Protection of Environmental Notification Forms for any projects which may have an environmental impact on Cambridge;

C. Maintain communication with advocacy groups, legal representatives, and others who routinely participate in EIR's;

D. Distribute to interested departments, boards, and agencies, a regular summary of EIR related activity effecting Cambridge.

E. Represent the City of Cambridge at EIR related public hearings and informational sessions;

F. Gather information on projects which may have an environmental impact on Cambridge;

G. Maintain the records and coordinate the functions of the environmental impact response committee;

H. Undertake various activities at the direction of the environmental impact response committee, such as drafting of EIR comments, briefing of City officials, etc.

17.24.030 Environmental impact response committee

1, The Environmental impact response committee (henceforth the committee) shall have the responsibility for City participation in EIR's.

2. The committee shall not act or release findings without the prior approval of the City Manager. The committee shall act at the discretion of the City Manager.

17.24.050 Committee membership

1. The committee shall consist of a single representative from each of the following agencies:

A. Community Development

B. Health and Hospitals

C. Law

D. Public Works

E. Conservation Commission

2. Committee members shall be appointed by the heads of each of the aforementioned departments. In the case of the Conservation Commission, the committee member shall be the staff director.

3. The Environmental Program Director shall serve as chairperson of the committee, and shall represent the City Manager. The Environmental Program Director may appoint the Coordinator to serve as chairperson in his/her place.

4. The committee may at its own discretion invite other individuals to participate in its affairs, subject to the approval of the City Manager.

5. The committee shall meet regularly at its own discretion.

17.24.050 Powers and duties of the committee

With regard to any particular EIR, the powers and duties of the committee shall include, but not be limited to, the following:

1. Review developments on any particular EIR as presented y the coordinator;

2. make a determination as to whether the public interest warrants City participation in the EIR process;

3. develop a draft unified City position, or in the alternative, a set of options, and present findings to the City Manager;

4. Contingent on approval of the unified position by the City Manager after appropriate consultation with the City Council,

develop and implement a lobbying strategy for seeing the unified position to its conclusion.

17.24.050 Committee procedure

1, The committee shall operating by procedures of its own choosing, subject to the provisions of this Section.

2. The committee shall make every effort to issue findings only on the basis of consensual agreement. Where such agreement is not possible, the committee shall appraise the City Manager of his options, and of the varying positions within the Committee.

17.24.060 Effect on other actions

1. Nothing in this Chapter shall preclude or prejudice any action by any branch or agency of City government at any time to protect the environment or conserve natural resources.

2, Nothing in this Chapter shall legally preclude individuals, and individual departments from participating in EIR's outside the bounds of this Chapter.

3. Nothing in this Chapter shall preclude or prejudice the right of citizens of Cambridge to participate in any way, shape, or form in the EIR process.

An Ordinance

to Encourage About Environmentally Sound New Construction through a Voluntary Environmental Permit Program

In amendment to an ordinance designated as the "Cambridge Municipal Code."

Be it ordained by the City Council of the City of Cambridge as follows:

Title 17 of the Code (Environmental Quality) shall be amended as follows. New Chapter 17.28, "Environmental Permit Program," shall be created as follows.

Chapter 17.28

Sections:

17.28.010 Purpose
17.28.020 Development of Permit Standards: Citizens' Commission on Environmentally Sound Construction and Development - Designation - Membership - Powers and duties - Length
17.28.030 Environmental Permit standards for new construction
17.28.040 Environmental Permit Process
17.28.050 Review of City Council
17.28.060 Effect on other actions

17.28.010 Purpose

This chapter addresses the desire of citizens for greater consideration of environmental issues in new construction and development in Cambridge. It establishes a voluntary permitting

process for new construction, based on clearly defined standards relating to a number of environmental issues. To maintain consistency with the City's often stated goal of retaining residential, commercial, and other development opportunities, and encouraging economic growth, this ordinance proposes to link the implementation of the Environmental Permit with a simplified overall permitting process for all aspects of new construction, including zoning rules and building permits.

17.28.020 Development of Permit Standards: Citizens' Commission on Environmentally Sound Construction and Development - Designation - Membership - Powers and duties - Length

1. The Citizens' Commission on Environmentally Sound Construction and Development (henceforth Citizens' Commission) shall be the forum for the development of environmental standards for new construction and for the design of a simplified overall permitting process for new construction.

2. Membership on the Citizens Commission shall consist of the following:

A. Three (3) representatives of neighborhood or residential concerns appointed by the City Manager, at least one of whom is a member of a neighborhood committee

B. Three (3) representatives of development concerns appointed by the City Manager, at least two (2) of whom have supervised development and construction projects in Cambridge.

C. The Assistant City Manager for Community Development, or a designate.

D. The Director of Inspectional Services, or a designate.

E. A member of the Cambridge Conservation Commission.

3. In the course of its investigations, the Citizens' Commission shall consult with the following City agencies on issues relevant to their operations:

A. Cambridge Conservation Commission

B. Planning Board

C. Department of Public Works

D. Traffic and Parking Department

E. Health and Hospitals Department

F. Water Department and Water Board

G. Fire Department

4. The Citizens' Commission shall have investigatory powers sufficient to fulfill its duties, as determined by the City Manager. The Citizens' Commission shall have the assistance of the Director of the Cambridge Environmental Program in completing its work.

5. The Citizens' Commission shall recommend environmental standards for inclusion in a new Environmental Permit for new construction. Along with this list, the commission shall report the following findings:

A. For each standard, a set of clearly defined actions which, if taken, would be sufficient for compliance: ie, inclusion of specific item in a design plan, or submission of a particular

document.

B. For each standard, a statement of the reasons the Citizens' Commission believes that the standard is not being met without regulation, ie: because of market failure.

C. For each standard, a discussion of the nature of public concerns about the issue being addressed.

D. For each standard, an assessment of the administrative efficiency of inclusion within the Environmental Permit Program as opposed to independent regulation.

6. The Citizens' Commission shall also recommend a simplified overall permitting process for those who participate in the Environmental Permit Review.

A. The aim of the simplified procedure shall be to lower the cost of new construction by decreasing the time and uncertainty involved in the permitting process for new construction.

B. The simplified procedure shall make every effort to ensure that departments with established authority over a particular permit area retain that authority.

C. In no case shall the simplified procedure run counter to the independent authority established for certain boards and commissions, such as the Conservation Commission and Planning Board, under state law.

5. The Citizens' Commission shall issue its findings within one year of the appointment of its members. Issuing of findings shall be the final act of the Citizens' Commission.

17.28.030 Environmental Permit standards for new construction

17.28.040 Environmental Permit Process

17.28.050 Review of City Council

A. The City Council shall review the findings of the Citizens' Commission with respect to the composition of Environmental Permit Standards (Code ch 17.28.030) and the Environmental Permit Process (ch 17.28.040) as part of the simplified overall permit process. The Council shall act on them with all deliberate speed.

B. An environmental permit process for new construction shall come into being with the fulfillment of subsection A of this section, and the enactment of Code ch.'s 17.28.030 and 17.28.040.

B. No less than two (2) years after taking action on part A. of this section, the City Council shall review the progress of the Environmental Permit Program to determine:

1. Whether the Permit should be made mandatory for new construction in Cambridge

2. Whether the simplified permit process should be extended.

3. Whether the standards laid out in ch. 17.28.030 are adequate to the purpose of this section.

17.28.060 Effect on other actions

Nothing in this Title shall preclude or prejudice any action by any branch or agency of the City government at any time to

protect the environment or conserve natural resources. Nor shall anything in this Title preclude or prejudice any future regulatory action by the City if a regulatory approach is deemed necessary and

Endnotes

1.Ordinances have been passed on atmospheric ozone depletion, solid waste reduction, noise pollution, and oil recycling In addition, the Council considered a traffic mitigation zoning proposal, and took action in relation to the parking freeze and visual pollution from billboards.

2.See Appendix A for a general overview of the constituents of environmental programs in Cambridge. For example the primary stakeholders in the zoning process are: developers, residents, and the City, specifically the Planning Board and Community Development Department.

3.Many reports of this type proceed through an analysis of various alternatives before selecting a preferred alternative. At the request of the client, this paper has not taken that approach. Instead, this paper discusses only the preferred alternative. Readers should be aware that in all cases a number of alternative policies, including the option of taking no action, were examined thoroughly. In every case, the preferred alternative was selected according to the criteria outlined in each section.

4. But this study does not attempt a hazard assessment, a prioritization on scientific grounds of threats to the air, land, water, and populations of the City. Professor Bill Clark at the Kennedy School of Government leads a project sponsored by the United Nations Environmental Programme (UNEP) to develop techniques of hazard assessment. His group has come up with easy to use tools for conducting hazard assessments of smaller countries. Given UNEP's current interest in local government, Clark might be interested in an application of hazard assessment techniques at the local level.

5.Owing to the lack of data available from Public Works, this figure is extremely difficult to estimate with any precision. The previous Commissioner estimated the cost of commerical service to be somewhat higher than $200,000 above its generated revenues due to pricing below cost. A preliminary investiagation of the true cost of Cambridge waste disposal (Kessler, unpubished) suggests that this is an underestimate. The pending results of an Order of the City Council (4 March 1991) should allow for a more accourate appraisal.

6.Calculated based on current earnings and an elasticity of demand for stickers based on recent price increases.

7.This especially given new demand for parking in East Cambridge. An exception may be made for the fees charged at hospital lots.

8.While no revenue estimate is offered here, if one takes the word of the building owners and developers who wish to obtain them, these permits are in very heavy demand. Though this would not be a steady source of income, it could provide substantial startup funds for the CEP.

9. Commenting on the role of quality professionals in business, Garvin, p. 26, notes, "technical expertise remains desirable, but an understanding of the company's strategic goals becomes more important. Education and training become key responsibilities, as do program assessment, goal-setting, and consultative work with other departments.

10.Letter from R. Phillip Dowds, Director, Cambridge Citizens for Livable Neighborhoods, to Councillor Francis H. Duehay. 26 December 1990 (See Appendix B).

11.He might, for example, have asked the Director to investigate last year's concerns about the water supply, or manage the initial stages of curbside recycling.

12.On this point see Barzelay and Armajani, "Managing State Government Operations: Changing Visions of Staff Agencies," Journal of Policy Analysis and Management, Summer 1990, p. 307-331.

13.From Barzelay, unpublished draft.

14.See Barzelay, unpublished; Garvin, David A. Managing Quality: the Strategic and Competitive Edge, 1988, p. 26-31; Moore, "Transforming People and a City," Journal for Quality and Participation, July/August 1990, p. 74-76.

15.Note the distinction between purposes and means. It would be impossible to instruct City agencies on every permutation of environmental quality issues.

16.Paraphrased from Barzelay, unpublished. The critical importance of the personal actions of City leaders in communicating norms has been well established. See Juran, as reported in "Quality Can't be Delegated," Supervision, May 1988, p. 6-7. Garvin, p. 193, identifies high-level participation as a "critical element" in explaining the success of Japanese total quality management in communicating quality norms to employees. "High-level Japanese executives have been personally involved in quality activities. They have attended and taught training programs, mastered the rudiments of statistical quality control,; stressed the importance of quality in policy directives and statements of corporate philosophy; and set a strong example for their employees.... Such leadership was lacking in the U.S."

17.Examples of areas where norms are well understood and generally complied with include budgeting, procurement, and employee relations. The purposes and values which underlay regulation on these topics are generally understood by City employees.

18.For a discussion of the impact of feedback on the behavior of government employees in bureaucratic agencies see Barzelay and Armajani, "Managing State Government Operations: Changing Visions of Staff Agencies," Journal of Policy Analysis and Management, Summer 1990; p. 307-331.

19.See budget projections.

20.This is a version of the argument that bureaucracies seek to perpetuate themselves and increase their control over their environment.

21.Waste reduction ordinance (citation needed).

22.See Stewart, J. "Worker Reward Schemes." Management Decision, April, 1989, p. 80-81; Cox, "Quality Circles in City Government," Quality Circles Journal, June 1986, p. 18-19.

23.Barzelay, unpublished, details the use of compliance agency power advisory power on budget decisions as a mechanism for achieving departmental compliance with norms, in that case related to information systems procurement.

24.A useful framework for analyzing options to foster environmentally sound development was provided by a report of the Office for Long-Range Planning, City of Seattle, entitled Design Review: Analysis of Options, October 1988.

25.Since MEPA reviews are far more common, this discussion will focus on them. Unless distinctions are made, the reader should assume that findings and recommendations apply to participation in NEPA as well.

26.Departments with an interest in Environmental Impact Response are: Community Development, Health and Hospitals, Law, Public Works, and Water.

27.Typical EIR's run from 350 pages to several volumes. Supporting documents are usually even larger.

28.Many of these, particularly the economic arguments, require empirical backing which is beyond the scope of this study. Empirical analysis in support of these arguments should be a major part of the development of specific permit requirements.

29.Not the least of which is the fact that modifying zoning ordinances is a cumbersome and politically difficult process, requiring seven of nine votes on the City Council. This requirement doomed traffic mitigation zoning.

30.See previous discussion, p. 17-27.

31.Recall the discussion of difficulties in environmental management contained in the introduction to this paper.

32.This is not meant as a full blown analysis of environmental market failure. Some explanation can be found in Tietenberg, Natural Resource and Environmental Economics. Empirical evidence on the correctness of theoretical economic explanations for the underemployment of environmental protection measures in new construction is sorely lacking.

33.Including negative environmental externality, imperfect information about environmental harm or potential remedies, imperfect pricing of inputs to construction or building use, environmental public goods, etc.

34.The idea here is for the composition of the Committee to reflect the departments with an interest in the various standards for new construction. Thus, if the Council adopted standards for toxic chemical storage tanks, a representative of the Fire Department should be included; recycling standards would suggest the presence of the Recycling Coordinator; etc.

35.Office for Long-Range Planning, City of Seattle, Design Review Analysis of Options, October 1988, p. 7.

36.Municipal Code, chapter 8.48, ozone depletion.

37.One possibility not formally endorsed in this proposal but worthy of consideration is the idea of having City-wide guidelines and specific standards set at the neighborhood level. The variety of living conditions in Cambridge suggests that this is perhaps a more precise way of defining environmental, particularly quality-of-life, concerns. Establishing neighborhood standards could be a lengthy and complicated process requiring careful attention to due process. Its outcome would likely run counter to the equity concerns for which environmental standards are created.

38.Organizations such as Cambridge Citizens for Livable Neighborhoods and Cambridge Eco have shown that there is no shortage of citizens willing to donate their efforts in the service of their neighborhoods. Nevertheless, timely appointment of representatives on a project-by-project basis would be very difficult, and selection of permanent representatives from each neighborhood would require a whole new organizational infrastructure. The adoption of a combined one-stop permitting system, as discussed elsewhere in this section, presents an appropriate occasion to revisit the question of neighborhood participation in project review.

39.For example, consider the ease of determining whether a project has 'X' feet of storage space for recyclables, as opposed to whether a project has a "significant environmental impact."

Cambridge Environmental Program

FINAL REPORT

Volume Two

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Volume Two

Introduction

The first volume of this study focused on the internal workings of City government and laid out a management structure at the Executive level. The Cambridge Environmental Program (CEP) will provide a strong organizational foundation for further efforts to improve environmental quality in Cambridge by improving the ability of the City Manager, at the direction of the City Council, to exercise leadership on environmental issues.

Volume Two addresses the ability of the City's operational departments to carry environmental quality to residents, businesses, and institutions. Critics are quick to ascribe the difficulties of implementing environmental regulations to unmotivated government officials, greedy businessmen or indifferent citizens. In the final analysis, only people can be held accountable for their actions. But the actions of individuals are influenced by government, and government may choose from a number of approaches to modifying individual behavior. Two approaches are command and control, and empowerment. Under the command and control approach, government uses rules and penalties to influence the actions of individuals which will in turn solve problems. Under the empowerment approach, government uses education and assistance to enable individuals to solve problems themselves.

The question for this volume is as follows. Which of these approaches can the City employ most effectively towards the goal of improving environmental quality? The answer has implications at all levels of City government: for the actions of the City Council, management strategy of the Executive, and implementation at the departmental level. This volume begins in Section I with a comparison of two approaches to environmental protection in Cambridge: command and control, and empowerment. Section II outlines a strategy for implementing the empowerment approach at the departmental level, using the example of integrated waste management through the Department of Public Works.

With the establishment of the Cambridge Environmental Program, the City has the opportunity to choose a direction for future environmental protection efforts. This volume suggests both an appropriate path and the first steps to be taken.

Section I:

Environmental Quality Improvement

Command and Control vs. Empowerment

This section compares two overall approaches to dealing with environmental issues in Cambridge: (1) command and control, and (2) empowerment.

Command and Control

Command and control regulation is the traditional method by which government attempts to protect the natural environment from injurious human activities. The series of techniques used to achieve control have been described as follows:

> Use rules to control, use devices to control, use peralties to control, use the courts or a rulebook to maintain standards. If the desired standard still doesn't result, apply more controls, and confront the offenders more heavily and more regularly.[1]

This is the dominant mode of interaction between government, institutions and individuals, and between departments within a governmental unit, with respect to environmental issues.

The traditional paradigm has brought about great progress in many areas of government activity, including environmental protection. It has led to the adoption of clear and powerful rules, applied

without respect to a person's status or the wealth of a company, in areas such as air and water pollution. It has given government agencies some strong enforcement tools. And it has encouraged governments to create agencies such as EPA to more efficiently deal with environmental issues.

Cambridge has attempted to tackle environmental issues through regulation or other forms of control: laws constraining government action; bureaucratic oversight of government agencies; and government control of private citizens, businesses and institutions. The recent Ordinance for the Protection of the Ozone Layer is one example.[2]

Ozone Depletion: The City Council recently passed an ordinance which bans the production, sale or use of ozone depleting chemicals called CFC's, and mandates CFC emission controls particularly on air conditioning repair equipment. The Department of Health and Hospitals is the implementing agency. Its task is made more difficult by several factors. The beneficiaries of ozone protection have yet to be born. Businesses object to shouldering burdens without any prospect of receiving tangible benefits. The need to monitor compliance has spawned an extensive system of reporting requirements on effected businesses. The Department is also struggling with the requirement to provide assistance to businesses.

Policies employing the traditional command and control approach have been hamstrung in meeting emerging environmental challenges. In seeking to respond effectively to environmental concerns, Cambridge faces a host of theoretical, technical, and managerial difficulties.[3] Environmental issues are ubiquitous. Though, a growing number of government policies have direct and intentional impacts on the environment, such as water treatment and park construction, important environmental impacts are typically the incidental byproduct of the normal activities of people trying to do something else.[4] Street musicians in Harvard Square produce noise pollution in neighboring apartments. Air conditioning units on homes and large buildings release chemicals which deplete the ozone layer. Decisions of the Purchasing Department may either encourage or retard the growth of markets for recyclable goods.

Application of the command and control approach would lead the City to adopt ever more vast and complex rules in response to the similarly vast and complex physical environment, each new ordinance bringing with it a new layer of bureaucracy. The attitude of operational department heads towards this sort of bureaucratization is understandably negative.[5] They would likely see such rules as insensitive to the multiple and conflicting demands of the City Manager, the Council, the public, state regulators, and their subordinates. The regulated community, in turn, would rail against inflexible laws and the City's failure to grasp the complexities involved in complying with them. An emphasis on enforcement would

ignore the fact that people may fail to comply with a rule because they do not know how. The City is particularly ill suited to the task of enforcing such rules on its citizens. It lacks the inherent power, financial, or human resources of the state and federal governments. It has no existing enforcement infrastructure on which to build.[6] In any case, ever more vigorous enforcement would set up an adversarial relationship between the City leadership and its agencies, and between the City and the regulated community. Under command and control, environmental protection is bought only at the price of environmental good will.[7] Consider, in this context, the example of the parking freeze.

The Parking Freeze: In 1970, Congress passed amendments to the Clean Air Act which would have required major cutbacks in automobile use to achieve air quality goals. States were required to develop state implementation plans, but like other states, Massachusetts failed to come up with a plan acceptable to EPA. EPA officials then stepped in to exercise direct control. Their Boston area Transportation Control Plan imposed a parking freeze in East Cambridge, which was expanded to the entire City.[8] A set of regulations governing the construction, division, sale and use of commercial parking spaces were developed. For whatever reason, those regulations were never enforced. To compel the City to act, EPA and the Massachusetts Department of Environmental Protection have threatened legal action. The end result will likely be a second round of parking regulations, a tighter set of controls, and

greater oversight of the City of Cambridge. While concentrating on the process, the parties seem to have overlooked the continuing lack of evidence to show that the parking freeze has an effect on vehicle use or air quality. The parking freeze thus typifies the traditional pattern of ever-increasing command, control and bureaucracy.

Backers would find it increasingly difficult to maintain enthusiasm for environmental protection under the command and control approach because the environmental costs (or benefits) of personal, institutional and governmental action are invisible to all but the carefully trained eye. Those who cause degradation do not typically face the true costs of their actions. The burden falls instead on other members of society or future generations, with little or no compensation. Similarly, the benefits of some environmental protection measures are public goods. Finally, environmental costs or benefits are not easily translated into measures of value, creating the false impression that they are not valuable at all.

Here too the example of the parking freeze is enlightening. Developers can easily show the financial costs of stricter environmental regulation. Yet the benefits, in terms of reduced air pollution, are difficult to detect, much less quantify. Traffic and Parking has little incentive to enforce the freeze rigorously, and strong pressure not to. Efforts to enforce the

freeze heighten the tension between the City and developers.

As the scope of environmental regulation broadened, pressures on a control oriented organizational structure would become more acute. Recycling education illustrates the problems Cambridge is likely to face in dealing with a wide variety of environmental issues.

Recycling Education: Recycling education, like many environmental issues, cuts across hierarchical lines, involving departments as different as Public Works, Human Services, Health and Hospitals, and Education. These agencies see recycling education as (at most) a diversion from their primary missions. Effective inter-departmental coordination has proven very difficult, despite strong pressure from the public, elected officials, and the City Manager.

Empowerment

Empowerment is an alternative to the traditional command and control approach to environmental protection. It springs from an analogy between the problems of environmental management faced by the City and problems of product quality management faced by business.[9]

> Words which come to mind and have been used in applying [this approach] are coordination, cooperation, prevention, partnership, and participation.[10]

Where command and control uses rules to tell people what they can or cannot do, the empowerment approach uses rules, standards, and guidelines to convey to people what is expected of them. It also

recognizes the potential of other methods to effectively convey environmental expectations, such as the actions of City leaders. Empowerment favors the ingenuity of individuals both within City agencies and the regulated community over rulebooks, but recognizes that individuals may need direction, education, material resources, feedback, and incentives to meet environmental goals.

Command and control envisions government as an efficient machine, mechanically complying with direction from the top and seeking similar compliance from the public. It suggests that the principle activity of government in the environmental area should be enforcement. Empowerment attempts to create both within operational departments and the regulated community a competent group of decision makers.[11] The essential elements of an empowerment strategy are as follows:

1. COMMITMENT: Develop and communicate the leadership's commitment to solving the problem and the norms of behavior necessary to doing so. Methods for demonstrating commitment include: establishment of rules, standards, and guidelines which tell people what the problem is and what they can do to solve it; demonstrative actions of the leadership; community education; etc.

2. ASSISTANCE: Facilitate the efforts of individuals and organizations to comply with the norms set forth by the leadership through useful technical assistance.

3. FEEDBACK AND RECOGNITION: Tell people when they are doing a good job of complying with norms, and warn them when they are not. Also, give them examples of what it means to do a good job. A formal recognition program is one form of positive feedback.

4. REWARD AND REMEDY: Make compliance with norms rewarding and create real disincentives to non-compliance, including but not limited to strong enforcement measures.

One example of this strategy at work in its infant stages is the commuter assistance program operated by the Community Development Department.

Commuter Assistance, a Non-Regulatory Alternative to the Parking Freeze. The year old commuter assistance program works with larger office complexes to get workers into alternative forms of transit through on-site MBTA pass sales, ride sharing computer networks, reserved garage space for car pools, private shuttles to the 'T' and other creative means. Commuter assistance offers a model of technical assistance at work, providing a service that is valuable to business and beneficial to the community, without the significant financial and political costs of regulation. The program does not, however, incorporate the commitment, feedback, or reward and remedy portions of an overall empowerment strategy. Readers of Volume One of this study might notice the parallels between the proposed CEP and the empowerment strategy outlined here. The proposal for the office of the CEP Director is reprinted here to illustrate the similarities.

> The purpose of the office of the Director would be to assist the City Manager in managing environmental quality efforts by: helping to formulate and communicate environmental norms, policies and standards; assisting operational departments with efforts to conform to environmental norms; transmitting feedback to all concerned about the results of efforts to improve environmental quality; recognizing those who make progress; and devising remedies for those who fail to live up to the expectations of the City Manager. The office of the Director would:
>
> identify rising environmental issues, public concerns, and pending regulatory and legislative changes.

> assist City agencies, the Manager, and the Council with long range planning and policy development.
>
> facilitate interdepartmental coordination on environmental issues, including an Environmental Permit Program and Environmental Impact Response.
>
> provide timely nuts-and-bolts information on environmental issues to City agencies at all levels.
>
> serve as the City's leader on environmental issues, seeking and communicating feedback on the results of environmental quality improvement efforts throughout the City.
>
> advise the City Manager on policy and budgetary issues relating to the environment.
>
> develop and operate a formal recognition program for City employees who take the initiative on environmental quality.[12]

Thus, the proposals contained in Volume One offer a first application of empowerment strategies to managing Cambridge's environment.

The empowerment approach appears to be far better suited to dealing with environmental issues. Consider once again the problems of managing environmental issues:

> Environmental issues are ubiquitous, yet hard to define; the costs of environmental neglect, as well as the benefits of environmental protection, are real and observable but not always quantifiable; environmental protection requires coordination; and the development of a shared consciousness is critical. Because many environmental tasks are practically inseparable from other functions of business or government units, they cannot be neatly separated out and agglomerated into a single bureaucracy. As knowledge and technology improve, peoples' expectations for environmental quality rise.

These problems roughly correspond to those encountered by managers attempting to improve product quality in manufacturing, service industries, and government. Consider the observations of a leading

quality expert:

> Quality is an unusually slippery concept, easy to visualize and yet exasperatingly difficult to define. It remains a source of great confusion to managers, leading to the frequent but empty claim, 'I know it when I see it....' Japanese companies provide an instructive contrast.... Progress has been achieved through a carefully orchestrated campaign of micro and macro polices, top management involvement, and floor activities.... An overriding philosophy [of quality] has encouraged a holistic approach.... Since competitors are unlikely to stand pat once they discovered that their quality had been surpassed, they too would try to improve, quality goals become moving targets, reset continually at higher and higher levels.[13]

A decade of trial and error in the U.S. in the field of product quality has produced some consensus on empowerment techniques that work and those that do not. A growing number of state and local agencies have confirmed that empowerment strategies used by executive agencies can successfully achieve policy goals.[14] As one state official has noted:

> For too long, environmental protection has been bought at the cost of good will. People have been forced into what is really best for them, and for us all. Because so much of what is necessary to gain real environmental progress goes hand in hand with improvements in efficiency, it is time for government to play the role of helping polluters to help themselves.[15]

In the remaining section of this volume the empowerment approach is applied to the problems faced by the Department of Public Works in moving Cambridge residents, businesses and institutions towards environmental quality improvement through integrated waste management.

Section II:

An Empowerment Strategy for Integrated Waste Management

The Executive Department and the Department of Public Works have stressed the need for additional planning and management capacity within the Department of Public Works (DPW). Impending changes in departmental leadership offer the City the added opportunity to move quickly towards new thinking on matters within DPW's domain, particularly waste management. With the release of the Commonwealth Master Plan in July, 1990, Massachusetts committed itself to the principles of integrated solid waste management. The report embraces the idea that the states waste is actually a real economic resource with extractable monetary value, a resource that government can no longer afford to throw away. It acknowledges that traditional waste disposal practices - landfills and incineration - impose real economic and social burdens which citizens will no longer tolerate in their communities. With the passage of the Toxic Use Reduction Act of 1989, the Commonwealth sensibly extended the logic of integrated waste management to toxics, breaking down the increasingly artificial barrier between toxic and solid wastes.

Moving from traditional waste disposal practices to integrated

waste management requires the adoption of a simple hiearchy as enumerated in the Masterplan[16]:

> **First, reduce the amount of waste produced, particularly that which is toxic;**
>
> **Second, reuse or recycle all appropriate components of the waste stream;**
>
> **Third, attempt to separate toxics thrown away by households, offices, and small commercial establishments, and dispose of them properly;**
>
> **Finally, landfill only those wastes that cannot be recycled or burned.**

Integrated waste management is good for the environment, good fiscal management, good business and thus good politics. The hidden threats to the air, surface and groundwater that result from poorly designed landfills, incinerators and improper dumping of toxics are well documented. Closer to the hearts of bureaucrats are the threats to budgetary stability which will soon materialize if the City fails to act. The expiration within two years of the City's disposal contract with BFI, the imminent closure of the Plainville regional landfill, and the state's intention not to build new incinerators in northeastern Massachusetts will drastically increase the price of traditional waste disposal. If changes are not made, an estimated $1 to $3 million annually will come directly out of the City budget,[17] leaving less for housing, assistance to the poor, health care, education, public safety, infrastructure improvements and other worthy causes.

Regulations recently put into force by DEP leave the City little choice but to act now. They ban outright the disposal in landfills of: (1) automobile batteries by the end of 1990, (2) leaves, old tires and white goods[18] by the end of 1991, (3) all yard wastes, aluminum materials, metal and glass containers by the end of 1992, and (4) all grades of recyclable paper and single polymer plastics by the end of 1994.[19]

An empowerment strategy holds great promise for moving Cambridge citizens, businesses and institutions towards the regular practice of integrated waste management. The form that such a strategy would take should by now be familiar. The City would begin by taking steps which communicate its own commitment to integrated waste management and give residents, businesses and institutions a clear idea of what it means to practice sound waste management. Second, DPW would provide technical assistance of one form or another to people in homes, businesses, commercial offices, and apartments seeking to reduce, recycle, or properly dispose of their wastes. Third, DPW and the Citizens Advisory Committee on Environmentally Desirable Practices would facilitate feedback through a formal recognition program. Finally, DPW would make use of various measures to ensure that compliance was rewarding and non-compliance with reduction, recycling, and disposal guidelines was costly.

1. Communicating a commitment to integrated waste management:

Regular observers of Cambridge politics note the enthusiasm of many Cambridge residents for recycling and reduction of solid waste and household hazardous waste. The City has hired a new Recycling Coordinator and plans to begin curbside residential recycling by the end of the fiscal year. In the mean time, a volunteer Cambridge Recycling Committee continues to support once-a-month drop off of recyclables. The recycling days have been well attended, even during the winter months. They have also produced positive revenue. Special wastes generated in the home and office, such as cleaning fluids, paints, thinners and pesticides, fall through a significant loophole in state and federal regulations. These are collectively referred to as household hazardous wastes. The Cambridge Garden Club, Public Works and the Department of Health and Hospitals jointly administer semi-annual household hazardous waste collection days.[20] These are very popular but also very expensive. The costs of contracting out for disposal of collected wastes are estimated at $25,000 per event.[21]

Enthusiasm alone is not sufficient to produce a real commitment to sound waste management practices. The current trendiness of recycling will surely fade. The following steps could be used by the City to communicate a more permanent commitment to reduction, recycling, proper disposal.

A. Enact a strong recycling ordinance. An ordinance, along the lines of the one currently working its way through the City

Council, should send a clear message to residents, businesses and institutions. It should indicate who is expected to recycle, and offer an explicit time line for implementation of recycling programs in larger buildings, if those are to be included in the program. The ordinance should also note the importance of waste reduction. A strong recycling ordinance is a necessary part of the City's overall integrated waste management strategy. City leaders should remember, however, that an ordinance, in itself, is not sufficient to bring about widespread recycling.

B. Begin reduction and recycling in City buildings. The start of recycling within City buildings offers a wonderful opportunity to demonstrate the City's resolve. The internal recycling program need not be thought of as something separate from external efforts.

2. Provide assistance to residents, businesses, and institutions: Technical assistance programs would target the waste management needs of companies, institutions, and residents. A Commercial, Office, and Apartment Program addresses the sorts of establishments which produce wastes regulated as solid wastes by state and federal laws, including household hazardous waste. A Toxic Generators Program would deal with the needs of those regulated as generators of hazardous waste under state and federal law, focusing particularly on small and very small quantity generators. A Green Homes Initiative would utilize the talents of the existing Consumer

Advisory Council, in cooperation with local businesses, to encourage household toxic and solid waste reduction. It would require no immediate staff changes.

A. Start a Commercial, Office and Apartment Program (COAP). This program would target the needs of facilities not served by the City's curbside recycling program. COAP would assist in the development of waste reduction and recycling plans. COAP would bring about responsible waste management practices in larger office buildings, apartment houses, hotels, municipal buildings, commercial establishments, supermarkets, etc.

COAP is proposed as a complement to the recently enacted ordinance for the promotion of non-residential solid waste reduction.[22] COAP staff would seek out establishments interested in pursuing reduction and recycling strategies, and assist on-site in the development of integrated waste management plans. Businesses and office complexes which produce as waste similar recyclable materials (such as polystyrene) would be encouraged to save money by entering into cooperative agreements with a single recycling contractor.[23]

The model for COAP is the existing commuter assistance program of the Community Development Department. Like that program, COAP can work because it provides a service that businesses and institutions will use to their own benefit as well as the benefit of the

community. Given the similarity in focus and operations between COAP and Commuter Assistance, these two programs might gain mutually from close cooperation.

B. Establish a Toxic Generators Program. This program is aimed at facilities which use, produce or discharge toxic chemicals, particularly those smaller companies not closely watched by DEP. The goal of the program would be to minimize the dangers associated with the presence of toxic chemicals in the urban environment. Through a comprehensive program of technical assistance, small companies would be helped to achieve toxic waste reduction, recycling and safe disposal.

On paper, DEP has regulatory and enforcement authority over all categories of toxic generators. In reality the state has focused its limited resource exclusively on the largest generators.[24] Absent voluntary compliance efforts on the part of the regulated community, laws governing small and medium sized generators go essentially unenforced. Yet smaller companies and institutions produce most of the toxic waste in the City. DEP reports only nineteen large quantity generators registered in the City, nearly all of which are well known, responsible corporations (such as Polaroid and Arthur D. Little), academic institutions or publicly regulated utilities. More than three hundred small and very small quantity generators have properly filed with the state. A walk through the yellow pages suggests that many more have not followed

the registration requirements. Not surprisingly, smaller generators have been the source of most toxic incidents recorded in the City.

The staff of the Toxic Generators Program would implement two initiatives: Toxic Use Reduction and Recycling for Cambridge (TURRC) and safe waste cooperatives. The inspiration for TURRC is the Massachusetts Toxic Use Reduction Act of 1989, an information-based approach to environmental protection. Under the Act, a Source Reduction Program works with groupings of similar businesses as well as individual companies to implement toxic use reduction strategies. Unfortunately, the state program reaches only the largest generators of toxic waste. TURRC replicates the state's efforts on a smaller scale. Staff would identify business groups or individuals with an interest in toxic waste reduction and recycling, familiarize themselves with or seek outside expertise in use reduction opportunities in those industries, and perform toxic use reduction audits in the field. TURRC might also convene industry specific workshops to discuss waste reduction and recycling strategies.

Where toxic chemicals cannot be taken out of the production process, their disposal or reuse must be properly managed. But following the law is prohibitively expensive for many small and very small quantity generators of toxic wastes. Licensed waste contractors commonly charge thousands of dollars just to come out

to a site, plus hundreds more per drum of waste. Moreover, companies are charged for a full drum of waste whether they have filled it or not. Safe waste cooperatives provide small and very small quantity generators an economically feasible means of compliance with stringent state and federal disposal regulations. They bring together businesses which produce similar types of wastes, all photographic labs in Cambridge for example, in a contract with a single waste disposal firm.[25] Toxic generators lower their disposal costs in three ways. First, they capitalize on economies of scale. The waste contractor can make milk runs; for example, silver oxides from every photo lab could be picked up in one trip. Second, generators can search for disposal contractors who specialize in the type of waste they produce. Third, combination of the specific chemical wastes of many firms creates opportunities for economically viable recycling of toxic wastes. Thus, the contractor may see value in the extraction of silver from large quantities of photographic waste, though no single lab would find it profitable to do so. The City's role would be in bringing generators together, identifying appropriate waste disposal contractors, and assisting in the process of negotiation where necessary.

The reporting requirements of the recent ordinance for the promotion of recycling of used motor oil offer safe waste cooperatives an opportunity to demonstrate their worth to business and the public.[26] In terms of volume, waste oil is by far the

City's largest toxic waste problem. Toxic Generators Program staff could organize cooperative agreements among businesses and institutions which must dispose of waste oil by law, and help to identify contractors or companies that will recycle that oil. DPW and other City departments with waste oil disposal needs might join with businesses in the waste oil cooperative. Successful implementation would undoubtedly set an example for other cities and towns in Massachusetts to follow.

The Commonwealth's environmental agencies are very enthusiastic about the prospects for these programs. The director of the Office of Technical Assistance, Executive Office of Environmental Affairs, has stated his willingness to introduce personnel to some of the engineering and environmental specifics. Officials at DEP's Bureau of Waste Prevention suggest that City personnel participate in training sessions now being organized for their own staff on the various issues involved in site work.

C. Act on a Green Homes initiative. Green Homes would be administered by the existing Consumer Advisory Council (CAC). The initiative targets consumers and merchants with the aim of promoting the sound management of toxic and solid wastes in the home through increased education and information. The CAC has demonstrated an ability to get information to consumers and to negotiate with local merchants. CAC staff claim a strong interest in environmental issues and seem eager to form working

relationships with local businesses around environmental concerns. The Green Homes initiative will give them the chance.

Under the initiative, the CAC would operate a Green Homes Hotline where consumers and merchants could get information on toxic products and available safe alternatives. Much of this information is already available through EOEA's Office of Technical Assistance, The Massachusetts Department of Public Health, DEP, the Massachusetts Water Resources Authority and numerous other sources. Complex questions could be referred to the newly created technical assistance staff at Public Works. CAC also could compose and distribute to merchants of household toxics copies of a Household Toxics Fact Sheet to be given to anyone who buys a toxic product. The sheet would briefly explain proper disposal and give the time, date and place of the next household hazardous waste drop off day.[27]

Administering the hotline will allow CAC to build up a base of high quality information on alternatives to toxic products. Distributing the fact sheet will yield CAC a good number of contacts with merchants. The CAC can put its newly developed talents to use by encouraging merchants to stock alternatives to toxic products along side those products on store shelves.

3. Provide feedback and recognition: The City Council enacted in March, 1990, an ordinance for the promotion of non-residential

solid waste reduction. Refuse from non-residential sources constitutes nearly half of the solid waste stream. The ordinance creates a Citizens Advisory Committee on Environmentally Desirable Practices. The Committee has already begun the process of providing technical assistance to businesses on solid waste reduction and recycling. It plans a one-day conference on the subject in the near future. Among the other responsibilities of the Committee is the development of a City recognition program. While such a program may be only incidental in the context of command and control regulation, it would be an important contributor to the success of an empowerment approach to integrated waste management. As such, the development of a recognition program should be a top priority of the Committee. Recognition, particularly individual recognition, has proven itself to be a strong motivator for people in all walks of life.

4. Reward those who reduce, recycle, and dispose properly and make non-compliance costly: A promising option for rewarding compliance and making non-compliance costly is modification of the pricing system for waste disposal. Because waste disposal is financed by general appropriation, Cambridge residents 'pay' for waste disposal through the property tax. But the amount paid bares no relation to the amount of waste produced. Were people charged for the waste they produce, they would have economic incentive to produce less. Pricing waste at or near its true marginal cost of disposal would lead to a roughly efficient level of recycling and waste reduction.

For example, people might shy away from excessively packaged products for fear of having to pay for their disposal. Those who continued to produce high volumes of waste would suffer the financial penalty of higher garbage fees.

Successful systems for pricing waste disposal have been used in cities across the U.S. and in many other countries. A thorough investigation of waste pricing options for Cambridge is currently underway. For this study, it is important to understand where policies like waste disposal pricing fit in an overall empowerment strategy. Reward, particularly financial reward, is perhaps the most powerful tool that City can use to compel the actions of individuals.

A program of integrated waste management for business must make business sense. For the most part, businesses pay for solid and toxic waste disposal already.[28] Though actual sources of savings will depend on the particulars, potential savings from toxic use reduction and safe disposal are considerable.

> In the case of toxic chemical use reduction, savings would come from: avoided costs of compliance with reporting requirements, air and water monitoring, characterization of waste, and restrictions on disposal methods; avoided economic liability risks and insurance costs; reduction in the purchase of raw materials; savings in off-site transportation costs; and avoided treatment, storage, and disposal costs, state taxes and user charges. One might also include those benefits derived from a better community image.[29]

Considering all costs, environmental quality initiatives appear to be a sound business decision. The growth of corporate

environmental quality programs has been hindered, however, by a lack of technical and informational assistance, and a strong animosity towards regulators. By shifting away from the traditional command and control approach to environmental regulation, the City would directly address the problem of adversarial relations between business and local government on environmental issues.

Costs and Benefits

While this report does not attempt a comprehensive cost-benefit analysis of moving from traditional waste practices to integrated waste management, several basic points deserve emphasis. By squeezing the value out of their waste, homes and businesses become more efficient. Less waste means less taxpayer money spent on garbage tipping fees. Last year, more than one hundred and twenty tons of waste were produced daily in Cambridge. The accounting cost of disposal of municipal solid waste, only half of the total waste produced, is nearly $5million. That figure will grow in response to rising tipping fees. Every ton of material kept out of the waste stream through source reduction, reuse or recycling liberates money for more worthy pursuits and needed services. If the City were to meet state targets for 1996, reducing landfilled municipal solid waste by 34%, it will have saved conservatively $1million annually in avoided tipping fees alone.[30]

A similar logic applies to toxic waste. Every drum of toxic substances reduced, recycled, or properly disposed of lowers the risks from unauthorized discharges into soils, waterways and air; illegal dumping on land; and accidental spills in City neighborhoods.

Worth mentioning too are the potential costs to Cambridge down the road if we fail to abide by state enacted waste bans. If the City cannot properly dispose of yard wastes, paper, plastics, metal and other materials subject to such bans, DEP will impose its own solution. As has been the case with the parking freeze, failure to deal with the problem today will leave a legal, bureaucratic and financial mess a few years down the road.

Of great potential importance are the benefits derived from revenues generated through a program of waste disposal pricing. Ideally, DPW could use these revenues to finance residential waste removal operations, making trash pick up a self-supporting operation. This would free up funds currently spent on trash pick up for other worthy pursuits.

Conclusion: Some Cautionary Notes

The proposals detailed in this report go well beyond a change in policy. Their adoption would signal a dramatic shift in the whole approach to environmental protection from control oriented regulation to empowerment. Similarly, the move from traditional command and control to technical assistance as the dominant means by which the City protects the environment will create expectations on the part of business. The City cannot expect to have enthusiastic participation on a voluntary basis in one area of environmental quality, and force immoderate control on business in another. Thus, for the empowerment approach to work, the City Council will have to resist instinctive calls for increasingly restrictive environmental regulation.

The City can take innovative action to improve the quality of its environment without expending large sums of money or energy on pollution control, without antagonizing residents, and without creating for itself the reputation of being inhospitable to business. This study has demonstrated the potential of empowerment strategies for improving the environmental quality of Cambridge.

Endnotes

1.Hamson, et al. "The New Paradigm and Hazardous Waste," Journal for Quality and Participation, September 1989, p. 60.

2.(Citation needed) ozone ordinance.

3.Recall the discussion of the particular problems faced by the City in managing environmental issues in the introduction to Volume I, Section I.

4.O'hare, in American Society: Public and Private Responsibilities, Knowlton and Zeckhauser, eds. 1986, p. 99.

5.Consider, as in Volume One, the feelings of City employees towards the Massachusetts Department of Environmental Protection.

6.Consider the compliance rates for the typical ordinance of the City of Cambridge.

7.See discussion by Barzelay, in "Strategies for Compliance Activities," unpublished.

8.Which grew out of worries that drivers would circumvent Boston's freeze by parking in East Cambridge and commuting the short distance to downtown.

9.This observation was made by Professor Michael O'Hare, John F. Kennedy School of Government, Harvard University, in comments on the Interim Report of this study.

10.Hamson, et al. p. 60, refers to this as the excellence paradigm.

11.Again, see Barzelay.

12.Volume One, p. 10-11,

13.Garvin, David A. Managing Quality: The Strategic and competitive Edge. 1988, introductory comments, p. xi.

14.See Barzelay and Armajani, "Managing State Government Operations: Changing Visions of Staff Agencies," Journal of Policy Analysis and Management, Summer 1990, p. 307-331; Moore, "Transforming People and a City," Journal for Quality and Participation, July/August 1990, p. 74-76; Cox, "Quality Circles in City Government," Quality Circles Journal, June 1986, p. 18-19; Bemowski, "Putting the Pieces Together," Quality Progress, May 1989, p. 17-22.

15. Letter from Rick Reibstein, Director of the Mass. Office of Technical Assistance, Executive Office of Environmental Affairs, in response to this study's Interim Report, 3 December 1990.

16. Commonwealth Masterplan: Toward Integrated Solid Waste Management, Massachusetts Executive Office of Environmental Affairs, July 1990.

17. In current (FY '90) terms, based on the assumption of no growth in Cambridge municipal solid waste production over the next five years. The costs would result from an increase in tipping fees of between 25 and 50%.

18. Washing machines, dryers, refrigerators, microwave ovens, fluorescent lighting fixtures and other household appliances. White goods, particularly those manufactured before 1970, contain capacitors and lighting ballasts filled with PCB's, a known carcinogen.

19. Solid Waste Management Regulations: 310 C.M.R. 19.017. Reprinted in the **Commonwealth Master Plan**, p. 7. Whether these regulations apply at the municipal level, or to individual haulers is as yet unclear. If the regulations are meant to apply at the municipal level, they would place responsibility for all waste producers, including commercial and industrial producers, on City government, regardless of whether the City actually hauls their wastes. Otherwise, the City would have direct responsibility only for those customers served by DPW, residences and a limited number of commercial accounts.

20. Hazardous wastes generated by households or by offices in regular maintenance are exempted from the various laws governing toxic generators.

21. Once household hazardous wastes have been collected they are regulated like other toxic wastes under applicable federal and state laws. Their disposal thus becomes very expensive. DPW currently picks up the tab for the collection days.

22. Chapter 8.56 of the Municipal Code, "Promotion of Non-residential Solid Waste Reduction." The title is not meant exclude non-residential recycling efforts.

23. The waste cooperatives concept is discussed in more detail with respect to toxic waste generators. Staff could apply the concept equally well to unregulated office generated toxics, such as xerox toner and cleaning fluids.

24. Toxic generators are categorized roughly based on the amount of waste they generate and the danger posed by it to the public. For example, the Resource Conservation and Recovery Act, the federal law governing the tracking and disposal of hazardous wastes, distinguishes between large, small, and very small quantity

generators (LQG's, SQG's, VSQG's) based on the number of drums of waste generated in a given time period.

25.Or perhaps in Cambridge and surrounding communities.

26.Chapter 8.52.010(A) of the Municipal Code, "Promotion of Recycling of Used Motor Oil." "Any person engaged in the retail sale of automotive lubricating oil shall file an annual report with the Cambridge License Commission. This report shall detail: (1.) the total amount of [oil] solid at each retail outlet during the previous calendar year; (2.) the total amount of used motor oil accepted from the public...; and (3) a statement of how the accumulated used motor oil was recycled and/or otherwise handled."

27.This program would probably require enabling action by the City Council.

28.There is some question whether they pay the full social marginal costs, however.

29.Hamson et al, p. 62.

30.Net present value (FY' 90 dollars) of savings in 1996, based on the size of the current waste stream and a conservative estimate of likely tipping fees by that time. This figure does not include savings from reduced use of vehicles, fuel and labor in municipal waste collection, nor does it include the avoided environmental costs of disposal.

OFFICE OF THE CITY CLERK

CITY OF CAMBRIDGE

CITY HALL, CAMBRIDGE, MASSACHUSETTS 02139

(617) 349-4260

JOSEPH E. CONNARTON
CITY CLERK

JOHN E. FLYNN
DEPUTY CITY CLERK

May 17, 1991

Mr. Russell B. Higley
City Solicitor
City Hall
Cambridge, MA 02139

Dear Sir:

Please be advised that at the City Council meeting of Monday, May 13, 1991 the City Council accepted the report from the Councillor Duehay, Chair of the Committee on Environment regarding the discharge of the Cambridge Environmental Program from the Committee. In this report there were the following proposed amendments to the Municipal Code which was then referred to the Committee on Ordinances:

1. Chapter 2.114 - Cambridge Environmental Program.
2. Chapter 17.04 - Cambridge Environmental Quality Policy.
3. Chapter 17.08 - Environmental Planning.
4. Chapter 17.24 - Environmental Impact Response.
5. Chapter 17.28 - Environmental Permit Program.

Would you kindly review these proposed amendments to ensure that they are in context with the Municipal Code prior to the hearings before the Committee on Ordinances.

Your kind attention in this matter will be greatly appreciated.

Sincerely yours,

Joseph E. Connarton

Joseph E. Connarton
City Clerk

JEC/dl
ENCS. (5)

CCM-101

City of Cambridge

CR #2

IN CITY COUNCIL

May 13, 1991

COUNCILLOR CYR

ORDERED: That the report entitled THE CAMBRIDGE ENVIRONMENT PROGRAM DATED MARCH 1, 1991 be forwarded and that the City Manager be and hereby is requested to provide this City Council with a scheduled for implementation and with one recommended funding source being the waste collection fee assessed to commercial users.

In City Council May 13, 1991.
Adopted by the affirmative vote of nine members.
Attest:- Joseph E. Connarton, City Clerk.

A true copy;

ATTEST:- Joseph E. Connarton

Joseph E. Connarton, City Clerk

City of Cambridge

The Environment Committee conducted a public hearing on Thursday, May 2, 1991 beginning at 5:35 p.m. in the Ackermann Room, City Hall.

Councillor Francis H. Duehay, Chair of the above referenced Committee convened the hearing and stated that this evening's discussion would center on the discharge of The Cambridge Environmental Program from Committee to the full City Council for its review and consideration. Present at the hearing were: Councillor Edward N. Cyr, Councillor Sheila T. Russell and Deputy City Clerk John E. Flynn.

Councillor Duehay provided to the Committee a review of the three substantive elements of the Cambridge Environmental Program:

1. Establishment of the Office within the Executive Department;
2. Pro-active approach to Environmental Impact Reports, and;
3. Administration and Implementation of Environmental Permitting.

In follow-up remarks, the Chair stated his belief that environmental issues have been piling in on the City Council, thus forcing the City to react to issues instead of anticipating them. He cited the SIP and Scheme Z as examples of this reactive position. He further stated that the responsibility for the implementation of the SIP will have to be placed somewhere with the City's organizational structure.

Councillor Cyr questioned the appropriateness of placing the office within the Executive Department as opposed to the Commissioner of Health and Hospital 's office. He cited the far-reaching statutory authority granted to the Commissioner in environmental issues as opposed to limited authority granted to the City Manager.

Councillor Duehay in response stated that the City Manager had endorsed this plan and it would be his responsibility to implement said plan if approved by the City Council.

Councillor Russell questioned the funding source for the creation of this office given the present economic conditions facing the city.

Councillor Duehay cited the option of raising the waste collection fee charged for commercial users thereby no additional costs would be borne by the citizenry.

Councillor Cyr stated that clearly a need exists for a mechanism to be in place to allow for the City to better anticipate issues before the fact instead of after causing thousands of dollars to be spent in litigation and/or settlements.

Councillor Duehay stated that a challenge that will be facing the City administration and the workforce in the upcoming years will be in the areas of retraining and technical expertise to deal with environmental issues. He further stated that the report as presented could be used as a model to that end, and a blueprint for future actions.

City of Cambridge

Councillor Cyr made the following motion:

ORDERED: That the report entitled The Cambridge Environment Program dated March 1, 1991 be forwarded and that the City Manager be and hereby is requested to provide this City Council with a schedule for implementation and with one recommended funding source being the waste collection fee assessed to commercial users.

The motion carried on a voice vote.

Councillor Duehay in closing stated that the City Council has scheduled this matter for a public hearing on May 13, 1991 at 7:00 p.m.

The hearing adjourned at 5:59 p.m.

For the Committee

Francis H. Duehay (JCF)

Councillor Francis H. Duehay
Chair

2.
COMMITTEE REPORTS 0-63

Report from the Committee on Environment for a hearing held on Thursday, May 2, 1991 regarding the discharge of the Cambridge Environmental Program from Committee.

5/9/91 Placed on file without prejudice

In City Council,

May 13, 1991

Report accepted
Order adopted
Draft ordinance referred to Ordinance Committee
Copies of 5 amendments enclosed sent to Ord. Comm. 5/17/91 (a)