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CAMBRIDGE MA.

**SIMPLEX STEERING COMMITTEE
RESPONSE**

TO

**MASSACHUSETTS AVE./SIDNEY ST.
DEVELOPMENT**

DEIR 5487

MAY 9, 1986

SUMMARY

Development according to Forest City/MIT will mean: a nightmare of rush-hour traffic jams, main streets choked beyond capacity, neighborhood side streets unsafe for anything but a steady stream of automobiles trying to avoid gridlock at key intersections, almost 1000 cars going around and around in circles looking for parking spaces, flooding, sharply increased noise levels and air pollution, and, close to 2000 workers seeking housing in Cambridge adding to the already-astronomical housing pressures.

This is what Forest City/MIT tells us in the March, 1986 Draft Environmental Impact Report (DEIR). The actual impacts will be much worse. Forest City/MIT suggests solutions for some of these impacts, but for most they throw up their hands. The solutions that they suggest will require the expenditure of millions of dollars, but Forest City/MIT never gives a hint as to how much and who pays.

Forest City/MIT's own consultants, therefore, have made a case for why NONE OF THE DEVELOPER'S PLANS SHOULD BE BUILT. At the same time, the scope of work required by the MEPA unit of the Executive Office of Environmental Affairs (MEPA) has not been completed. Forest City/MIT has failed to examine the range and extent of environmental impacts created by a genuine, reduced-density alternative plan as required by MEPA. By doing so, they missed the opportunity to show whether ANY intense development plan is environmentally sound on this site.

Forest City/MIT studied an alternative that is 20% less dense than the now-outdated ENF Plan (Alternative 2). In the final EIR, they must examine an alternative plan for development that is at least 20-30% less dense than the Current Proposal (Alternative 1). The Cambridge City Council has voted unanimously in favor of such an examination. If even this plan is environmentally unsound, then further reductions must be made. Forest City/MIT must add to, correct, and improve on their data, methodology, analysis, and conclusions in the various environmental impact areas as summarized below.

Description of the Site

The DEIR does not show evidence of site control. The proponent, Forest City, is offered up as the developer, but MIT is the property owner. No evidence of a formal relationship between the two has been presented. The description of the

existing project site is misleadingly derogatory. There is viable, well-maintained housing, dormitory, retail, commercial and light industrial space in the Simplex development area, in spite of 15 years of demolition and dislocation by MIT.

Description of Alternatives

MEPA required that the reduced-density alternative explore areas of controversy raised by, and include key elements of, the city and neighborhood plans. This was not done. An accurate description of alternative plans must distinguish between light industrial and research and development (R&D) uses since they have different environmental impacts.

Transportation - Traffic and Related Impacts

The DEIR shows clearly that traffic is virtually an insurmountable problem. But, it downplays the impact of background development at Harvard Square, downtown Boston, and Alewife; doesn't cover key bottlenecks just beyond the study area; and is too optimistic in predicting a shift to transit use and in assessing the prospects of the MBTA being able to handle additional riders. The public is not alerted to the full practical impact of actual traffic because the report only says that there is so much demand that it swamps the system. Forest City/MIT cannot make the roadway system work, even with mitigation. What actually happens to excessive traffic? Does it go on local side streets? What are the impacts of such a possibility? The report does not answer these questions.

Transportation - Parking Impacts

The parking analysis is extremely cursory. It does not address the questions posed in the MEPA scope or the impacts which will occur as a result of the project's lack of adequate parking. The DEIR makes no mention of the enormous existing parking problems adjacent to the site in the residential areas of Cambridgeport and Area Four, in Central Square, and at MIT. The report admits that the project will be short by 930 parking spaces. Based on a less optimistic prediction of transit use, the parking shortfall will be closer to 1600 spaces.

Air Quality

Through a series of misapplications, simplifications, and misrepresentations of modelling data, the air quality analysis seriously underestimates the air pollution from the project. The proponent chose to ignore all pollutants except carbon monoxide. Nitrogen dioxide is an increasing problem in the

Boston area and particulates are exhaust components of diesel-powered vehicles, but these pollutants were left out of the study. Narrowing the study of air quality to carbon monoxide put the developer in the best light, but it fails to fulfill the requirements of the MEPA scope.

Noise

The analysis for noise impacts is superficial and doesn't address the specific requirements outlined in the MEPA scope. The standards used for "acceptability" are inappropriate. Noise levels that impair hearing are not the only unacceptable noise levels. The noise measurements carried out were extremely limited and did not establish what noise levels are now. Construction noise and vibration wasn't properly analyzed. Mitigation measures are qualitative and based on misinformation.

Growth and Development

The growth impacts of a 27-acre, \$300 million, two-million square-foot development ought to be looked at carefully. It's the largest project in the history of Cambridge. Yet, Forest City/MIT has glossed over this subject more than any other. Sweeping generalities are made about the ability of the adjacent neighborhoods and commercial areas to withstand this onslaught. Rent control and housing subsidies cannot protect all the people of modest means in Cambridgeport and Area Four. Even if we were to assume as accurate Forest City/MIT's projections of 1600 new employees seeking housing in Cambridge, can the 98 new units in the current plan begin to respond to this new demand? The claim that the demand will be absorbed citywide ignores the impacts of massive, new development projects in most other areas of Cambridge.

A much closer look can be taken of growth impacts. Additional data on existing conditions must be collected. A step-by-step methodology must be employed. And, the specific effect of this project on the elderly and people of modest means must be examined. Once the impacts are studied it will be clear that all of the Forest City/MIT plans will destroy the diversity and livability--the special quality--of the adjacent neighborhoods.

Open Space

Forest City/MIT's plan does not answer the needs of either the neighborhood or the city with respect to open space. Of the six new acres of open space created, only one acre can be considered a real contribution to neighborhood open space. The rest is typical of green areas employed in suburban office parks: forbidding and dangerous in the evenings and on weekends. No active, open space for adults, whether they be workers or residents, is proposed anywhere on the site.

Water, Sewer, and Storm Drainage

The Massachusetts Ave./Sidney St. development will require more than a mile of new water lines. Existing storm drains will not be able to handle the 41% increase in runoff without flooding. Green Street and Bishop Allen Drive have severe problems already. Forest City/MIT has not estimated the cost of required improvements or offered to pay for them.

Solid Waste

Solid waste disposal is not addressed in the DEIR despite the fact that garbage disposal capacity in eastern Massachusetts is severely limited and Cambridge is losing its disposal site within a few years.

Hazardous Materials

A "walkover" site survey isn't enough to answer important questions about chemical spills and debris. There is no data on sites where Simplex Wire and Cable Company buildings once stood. Soil sampling should have been done to test the possibility of contamination by highly toxic or carcinogenic substances such as PCB's. There are no plans to test the soil at open space sites where children will play in the dirt. Even where tests are promised, there is no provision for enforcement or community review of the results.

Conclusion

The full price that Cambridge and the adjacent neighborhoods will have to pay for the Massachusetts Ave./Sidney St. development has not been calculated. This is true for everything from the cost of a new water line to the social and economic costs of thousands of people being displaced. Until this is done and a real alternative is studied, MEPA and the public will not have the necessary information to make the best decisions for the future.

COMMENTS ON SECTION II: PROJECT AND AREA DESCRIPTION

There is a question as to what control Forest City has over the site and the project. No ground lease has been filed. The terms of Forest City's agreement with MIT are not known.

The question of control is not frivolous. The DEIR discloses that the ENF plan originally filed by Forest City covers land that is not owned by MIT. The issue of what land has been leased to Forest City is not even addressed.

This point is basic to the MEPA process. The proponent outlines his plan and makes commitments. It is meaningless to review the plan and the promises if there is no assurance that they can be carried out.

Furthermore, this is a 15-year construction project. What would the impacts on the neighborhood be if buildings are demolished and nothing is built in their place? Or if the office space and hotel are built, but no housing? We believe MEPA must require the proponent to show the nature and the extent of his control over the site and the project. Simply to say that Forest City has been designated by MIT is not enough; obviously it didn't prevent Forest City from proposing to develop land that MIT doesn't own and doesn't intend to buy.

The most reliable demonstration of Forest City's control is a copy of the developer's agreement with MIT and of the ground lease, if one exists. MEPA should require Forest City to make these documents available immediately, so that the state and the public can be assured of the credibility of the environmental review process.

The report describes the existing project site as ". . . vacant land and a mix of poorly maintained automotive, storage, and light industrial facilities . . ." (P. III-2) This is simply not true. It is not even consistent with descriptions of the area provided on P. II-7 and in the Appendix. There is viable, well-maintained housing, dormitory, retail, commercial, and light industrial space in the Simplex Development Area, despite 15 years of demolition and dislocation by MIT. The report should reflect an accurate description of the current condition.

COMMENTS ON SECTION III: DESCRIPTION OF ALTERNATIVES

The description of the Design Development Process glosses over the Community Development Department's planning process and fails to mention the Neighborhood Planning Process, the community-wide referendum, and the three neighborhood zoning petitions.

Forest City's discussion of MIT's primary objectives does not mention the objective of generating revenue for MIT. The environmental impact report should discuss what part this objective played in selecting the ENF Plan and the Current Proposal and should specify how the alternatives will affect the income received by MIT from the project.

The ENF Plan covers an area of thirty-one acres; the Current Plan, twenty-seven acres. Comparing the two, therefore, becomes like comparing apples and oranges. It does not suffice to say that the impact of the additional four acres becomes part of the background impacts. Perhaps that is why the DEIR fails to comment on the pros and cons of the various plans. It doesn't compare, summarize, or conclude.

The DEIR says MIT does not own the four-acre parcel that has been omitted from the site in the Current Proposal. However, according to the Cambridgeport Revitalization Plan, MIT owns close to half the four acres along Mass. Ave., and there is reason to believe that the university has options to buy more. In addition, MIT owns a substantial portion of land south of Pacific Street, which is not part of this proposal but which is considered potentially ripe for development. The action of the proponent in proposing to develop the four acres along Mass. Ave. and then withdrawing that plan raises a question about the real plans of MIT and Forest City. By selecting pieces of a master plan to present for review, they can avoid review of the cumulative impacts of development. The final EIR should specify MIT and/or Forest City's plan for the entire Cambridgeport Revitalization Plan district. At the very least, the report should say whether or not MIT will acquire more of the four acres along Mass. Ave. and what the university plans for the parcels that it already owns there.

The description of the Current Proposal (III-4 and 5) and the chart (III-3) says that the plan calls for 1 million square feet of "research and development and light industrial space," yet the map of the proposal delineates only "R & D." The final report should specify how much R & D space is planned, and how much light industrial. The two categories must also be separated in the other two plans. These new figures should then be used to generate new estimates of impacts.

The presentation of the various plans in this report is consistent with the pattern of behavior of MIT during the locally-initiated planning phase for the Simplex Area. Faced with regulatory involvement, MIT avoided it, or demanded the greatest flexibility within it. By doing so, MIT insured that any future plan would fall within the boundaries and look like a compromise. The ENF Plan is being used in much the same way, so that the Current Proposal looks closer to the reduced-intensity Alternative.

Forest City/MIT have not studied a reduced-intensity alternative of their Current Proposal, only of their ENF Plan. Since the Current Proposal is the one they intend to build, the 20-30% reduction should come off of this plan, not the ENF Plan. The reduced-intensity Alternative (The Alternative Plan) is 8-9% less dense than the Current Proposal. Therefore, Forest City, MIT, and their consultants have not presented a reduced-intensity alternative as required by MEPA.

Adding insult to injury, this inadequate Alternative Proposal does not even have a site plan. Since the proponent admits that the ENF and Current Proposal have serious negative environmental impacts, it is important to know the site plan of the Alternative. How can the environmental impact of wind, shadow, noise, traffic, etc. be weighed without knowing where, and how, the intensity is reduced?

The proponent claims that the Alternative is 20% less dense than the ENF Plan. Yet there is a 35% reduction in office space, an 11.6% reduction in R & D space, a 20% reduction in retail space, and the hotel remains the same size. Why have the various uses been reduced in an unequal way? The report alludes to an increase in open space for the Alternative. Where? How much? How does its location affect the environmental impacts?

The Scope called for examination of reduced-intensity alternatives so as to ". . . explore areas of controversy . . ." And, it called for the alternatives to be studied in the same exhaustive way that the ENF Plan was studied. The choice of an alternative that is 15% more dense than the plan represented in the city's Cambridgeport Revitalization Study and 25% more dense than the Simplex Steering Committee's Neighborhood Plan (see accompanying chart) means that Forest City missed the opportunity to explore areas of controversy.

In fact, the Alternative Plan fails to incorporate many key elements of the City and Neighborhood Plans as called for by the MEPA Scope (pg. 2, P. 1). It excludes light industry and active recreation that includes playing fields. It excludes a community center and any mention of a circumferential public bus route servicing the existing neighborhood as well as the new development. DEIR fails to evaluate structures deserving of preservation and/or rehabilitation for light

PROPOSED PLANS FOR THE SIMPLEX DEVELOPMENT AREA

	FOREST CITY/ M.I.T.		CITY PLAN (ESTIMATED)		NEIGHBORHOOD PLAN	
	CURRENT PROPOSAL	ALTERNATIVE PLAN	FROM THE CAMBRIDGEPORT REVITALIZATION REPORT 4/84		FROM NPP PRIORITIES & SIMPLEX STEERING COMMITTEE MODEL 6/85	
	27 ACRES	31 ACRES	31 ACRES	38 ACRES	31 ACRES	45 ACRES
OFFICE	890,000	900,000	367,000	367,000	272,500	800,000
R&D	1,000,000	680,000	637,000	637,000	136,600	1,000,000
LIGHT INDUSTRIAL	0	0	0	70,000	460,000	650,000
RETAIL	100,000	140,000	55,000	55,000	57,000	107,000
HOTEL	350 ROOMS	350 ROOMS	250 ROOMS	250 ROOMS	0	350 ROOMS
RESIDENTIAL	110 UNITS	184 UNITS	230 UNITS	230 UNITS	418 UNITS	450 UNITS
OPEN SPACE	6 ACRES	6+ ACRES	1.5 ACRES	3.9 ACRES	4.6 ACRES	6.5 ACRES
PARKING	3,145 SPACES	2,895 SPACES	1,425 SPACES	1,650 SPACES	1,800 SPACES	3,020 SPACES
TOTAL NEW DEVELOPMENT	2,367,750	2,171,750	1,480,250	1,550,250	1,344,100	3,274,750
EXISTING ON-SITE USES RETAINED						
COMMERCIAL	65,000	0	22,000	22,000	22,000	22,000
HOUSING	35 UNITS	16 UNITS	28 UNITS	28 UNITS	44 UNITS	44 UNITS
DORMITORY	93 ROOMS	0	93 ROOMS	93 ROOMS	93 ROOMS	93 ROOMS
LIGHT INDUSTRIAL**	0	0	315,000	500,000	320,000	340,000
TOTAL ON-SITE DEVELOPMENT	2,486,350	2,187,750	1,863,850	2,118,850	1,748,700	3,699,350
AVERAGE FLOOR AREA RATIO	2.1 F.A.R.	1.61 F.A.R.	1.36 F.A.R.	1.27 F.A.R.	1.28 FAR	1.86 F.A.R.

ALL FIGURES ARE IN SQUARE FEET, EXCEPT WHERE INDICATED

* HOTEL ROOMS AT 765 SQ. FT./ROOM; HOUSING UNITS AT 1,000 SQ. FT./UNIT.

DORMITORY ROOMS AT 200 SQ. FT./ROOM.

** FENTON SHOP & MAIN BUILDING

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industrial and other uses. This was specifically called for in the Scope section that granted a waiver for the KLH project (Record of Decision, p. 4, P. 2) and in the main body of the Scope (p. 5, P. 2).

Even if the Alternative Plan was 20-30% less dense than the Current Proposal (instead of 8-9%) it would fall short of what has been called for by MEPA in the Scope. This is because all of the proponent's alternatives fail to explore the areas of controversy and include key elements of the City and Neighborhood Plans. The Alternative in the Final EIR must fully comply with the scope, not just chop another 11-12% off all the numbers and "be done with it."

Contrary to erroneous legal advice offered during the MEPA Scoping session, MEPA does have the right and ability to specify all alternatives that should be studied. Chapter 30, section 62 specifies both the powers of MEPA and the legal challenges both to a scope, or to an EIR and its findings of adequacy by MEPA. It should not be necessary for anyone to seek legal recourse to see that a practical, feasible, acceptable alternative is studied in the Final EIR.

COMMENTS ON SECTION IV A: TRANSPORTATION -
TRAFFIC AND RELATED IMPACTS

Clearly, traffic is the single largest direct impact of the development. Traffic is also the primary limitation on site development. The lack of good traffic and transit access is a major stimulus to the most critical social impact in the area: added pressures on the Cambridgeport housing market due to roadway and transit congestion. These community impacts are so significant in terms of both project feasibility and community impacts that strong consideration should be given by the developer, MIT, the City of Cambridge, and MEPA to consider very fundamental changes in the basic concept of the project and its alternative land uses.

Strengths and Weaknesses of the DEIR

The report has several positive and negative points regarding traffic and transit.

Positive Aspects of the Report

1. DEIR assembles many important traffic counts and accident information.
2. DEIR estimates traffic demand from the project and the alternatives.
3. DEIR considers background growth traffic in the East Cambridge area.
4. DEIR looks at peak hour traffic over an extensive area and assesses 20 signalized intersections and 8 unsignalized crossings.
5. DEIR identifies the parking shortfall and attempts to make a realistic accounting of what would happen to actual parking given these parking constraints alone.
6. The public participation process, especially the information meetings in the community have been good, more informative than most city and state agencies achieve. Forest City is to be congratulated for its accessibility.

Negative Aspects of the Report

1. DEIR provides limited assessment of other background development, such as at Harvard Square, downtown Boston, Alewife or any area outside eastern Cambridge.
2. DEIR does not cover certain key bottlenecks just beyond the study area defined in the MEPA scope.
3. DEIR does not describe physically what the parking shortfall will mean for Cambridgeport (in terms of added on-street and off-street parking).
4. DEIR does not consider the effect of congestion constraints on traffic and transit usage. It does not go

beyond showing that traffic demand exceeds capacity and does not show what actually happens to traffic flows, on minor streets as well as major ones. The DEIR does not show where the traffic would actually go if V/C ratios exceed 1.0. How much traffic finds other routes or travel times? How much disappears due to carpooling or moving into the neighborhood? There is minimal discussion of the likely sidestreet routes that traffic might take in Cambridgeport.

5. DEIR is too optimistic and limited in assessing the prospects of the MBTA being able to handle additional riders from the development generally. The report assumes that the Red Line now operates at only 63% of existing scheduled capacity. This does not reflect the MBTA which many of us have come to know only too well.

TRAFFIC IMPACTS

The DEIR shows clearly that traffic is virtually an insurmountable problem both with and without the Mass. Ave./Sidney St. project. The developments at Kendall, Lechmere and Central Squares have created a reservoir of new traffic demand throughout the eastern section of Cambridge. This traffic already swamps the local roadway network.

Background traffic is sufficient to push V/C ratios to over 1.00 at seven locations in the study area, plus increasing traffic demand by 20% at the Memorial Drive/Western Avenue intersection, which is already at capacity in the afternoon peak.

How much of the background development traffic is already "locked in" by current construction and potential construction on vacant sites? The DEIR should include a listing of parcels and buildings showing their 1985/86 occupancy and projected construction status in the 1990-2000 period.

Traffic Demand with Parking Constraints

The traffic and parking assumptions in the DEIR are somewhat confusing. The first set of 1992 traffic figures is based on completely unconstrained demand -- with no effect from parking limits or traffic congestion. A second set of figures is used for the actual traffic capacity and transit impacts. This "parking-constrained" condition actually represents an intermediate traffic and parking condition because:

- (1) a parking shortfall still remains for all options. With the Current Plan, the shortfall is 930 parking spaces, equivalent to 6 1/3 acres or almost one-fourth of the entire Current Plan; and

- (2) traffic demand is still not satisfied, because V/C ratios still exceed 1.00.

With traffic demand partly constrained by parking limitations, the DEIR plan shows a total daily traffic activity growth which is about 1/3 as large as the background traffic added by Lechmere, Kendall, Central Square, etc. development. The "Current Plan" would generate about 13,000 daily vehicle trips, compared with 42,000 background trips.

Table One summarizes the traffic generation, parking and transit ridership for the project based on DEIR data.

..... TABLE ONE TRAFFIC, PARKING AND TRANSIT DEMAND									
COMPLETELY UNCONSTRAINED DEMAND	NEW COMMERCIAL/ INDUSTRIAL SPACE, s.f.	TRAFFIC DEMAND (car trips)		PARKING SPACES			TRANSIT DEMAND (person.trips)		
		DAILY	PM PEAK	DEMAND	SUPPLY	OFF.SITE	TOTAL	RED LINE	
1. NO BUILD	0	0	0	0	0	0	0	0	
2. City Plan, 1983.	1.5 million	?	?	3,350e	1,100	2,350	?	?	
3. The ENF proposal	2.5 million	17,620	2,780	5,580	3,620	1,960	10,600	7,000	
4. Reduced-scale ..	1.85 mill.	13,700	2,050	4,100	2,900	1,200	7,800	5,000	
5. Current Proposal	2.1 million	14,850	2,220	4,730	3,150	1,590	8,400	6,000	
** BACKGROUND DEVELOPMENT within study area		42,200					35,540	23,800	
		25,300					c.15,000	c.10,000	
TRAFFIC DEMAND LIMITED BY PARKING ONLY	NEW COMMERCIAL/ INDUSTRIAL SPACE, s.f.	TRAFFIC DEMAND (car trips)		PARKING SPACES			TRANSIT DEMAND (person-trips)		
		DAILY	PM PEAK	DEMAND	SUPPLY	OFF-SITE	TOTAL	RED LINE	
1. NO BUILD	0	0	0	0	0	0	0	0	
2. City Plan, 1983.	1.5 million	6,450	950	2,830	1,100	1,730	6,110	4,090	
2. The ENF proposal	2.5 million	15,280	2,380	4,720	3,620	1,100	14,650	9,820	
3. Reduced-scale ..	1.85 mill.	11,960	2,050	3,470	2,900	570	11,290	7,560	
4. Current Proposal	2.1 million	12,890	1,904	4,080	3,150	930	12,220	8,190	
** BACKGROUND DEVELOPMENT within study area		42,200					35,540	23,800	
		25,300					c.15,000	c.10,000	

Traffic Bottlenecks and Constraints

Using the partially constrained traffic demand figures in the DEIR, future 1992 traffic demand is estimated and applied to various intersection capacities to generate V/C ratios. The DEIR results show 11 out of 20 intersections have traffic demand that exceeds capacity, with the worst bottleneck being a V/C of 1.51. These calculations do not tell us what

actually happens to the traffic; they are only the first step in indicating how severely traffic demand exceeds capacity. With this information, we can produce a priority listing of local bottlenecks, as shown in Table Two, based on Current Plan data.

..... TABLE TWO BOTTLENECK PRIORITY LISTING, Current Plan

P.M. PEAK TRAFFIC CONDITIONS At Signals	Existing	No- Build	ENF	Reduced Intensity	Current Plan	With Mitig.
1.MEMORIAL DRIVE/WESTERN AVENUE	1.18	1.41	1.54	1.50	1.51	1.53
2.BROADWAY AND PROSPECT STREET	0.91	1.40	1.42	1.42	1.42	1.42
3.WESTERN AVENUE/PUTNAM AVENUE	0.83	1.14	1.49	1.39	1.41	1.18
4.MASSACHUSETTS AVE./VASSAR ST.	0.68	1.17	1.39	1.33	1.34	0.99
5.MEMORIAL DRIVE / RIVER STREET	0.96	1.21	1.28	1.26	1.26	1.26
6.RIVER STREET / PUTNAM AVENUE	0.70	0.98	1.32	1.23	1.24	0.98
7.MAIN STREET / VASSAR STREET	0.56	1.15	1.24	1.22	1.22	0.85
8.MAIN STREET / THIRD STREET	0.81	1.15	1.20	1.21	1.20	1.09
9.BROADWAY / PORTLAND STREET	0.63	1.02	1.15	1.12	1.11	1.09
10.MASSACHUSETTS/ALBANY STREET	0.59	0.89	1.11	1.06	1.06	-
11.MASS. AVE./MAIN/COLUMBIA ST. (Lafayette Square)	0.73	0.93	1.04	1.02	1.02	0.95

*** It should be emphasized that these figures presume perfect traffic signal timing, which is a condition not in evidence at many locations. ***

The area around Memorial Drive-Western-River-and-Putnam represents the primary traffic bottleneck concentration, including the highest V/C of 1.51. The six traffic signals in the Charles River and Putnam Avenue area (three each on River and Western) present a difficult problem.

Presently, afternoon peak traffic on Western Avenue can take more than one signal cycle to clear, while on Memorial Drive the queue regularly extends back to Magazine Street. On Putnam Avenue, traffic extends at least to Allston Street and on bad days as far as Kenwood and almost to Magazine Street.

The DEIR does not present mitigation proposals for this area and effectively admits that nothing can be done. Delays and queues will increase. Signal timing cannot be altered greatly without risking gridlock in the River-Western-Memorial-Putnam area.

The East Cambridge Traffic Cordon

The traffic problem in the eastern half of Cambridge is too general and comprehensive to be solved by dealing with individual intersections. The bigger problem is getting

through the perimeter of this area (crossing the surrounding cordon) and cannot be remedied by changes, however major, within the general area itself.

The best way to define the problem is to imagine a section of Cambridge bounded by the Charles River basin, Western Avenue/Prospect Street, and the Cambridge Street/McGrath-O'Brien Highway. This area includes Cambridgeport, part of Riverside, Area Four, East Cambridge, MIT, Kendall, Lechmere, and Central Squares. Traffic within this area may be able to circulate internally, but it has major problems getting in during the morning peak and getting out in the afternoon.

Western Avenue and Memorial Drive are backed up now. The Harvard and B.U. Bridges are often backed up heading into Boston, as are the Longfellow Bridge and Leverett Circle. The Cambridge Parkway/Prison Point Bridge intersection is also congested. Neither is it advisable to try leaving Cambridge by way of Inman Square. Broadway and Prospect is at capacity. Going through Harvard Square is not a desirable alternative.

Everyone is boxed in. This means developers and employees at Kendall Square, Lechmere, MIT, Simplex and the residents of East Cambridge, Area 4, and Cambridgeport. If this is the current condition, what will it be like when the buildings under construction and vacant office space begin to fill up in future years? The University Park DEIR has defined some of the area-wide access problems of Eastern Cambridge, without describing the overall traffic problem.

In view of these area traffic restrictions, the "mitigation" plans proposed by the consultant have very little significance. They do not deal with the bottlenecks. They do not deal with the problem of getting traffic out of Cambridgeport in the afternoon peak. A chain is no stronger than its weakest link, and the weak link for traffic is the congestion cordon which surrounds the local neighborhood. The mitigation package doesn't deal with the weakest link, and therefore it provides no practical benefits.

Mitigation Proposals

The Summary Table IV-A-28 on page IV-A-83-84 is very explicit. The table does not mention the Prospect/Broadway intersection, which will apparently retain its year 2000 V/C of 1.42 in the afternoon peak. The mitigation efforts actually increase the demand V/C at Memorial & Western from 1.51 to 1.53. Normally, does worsening the key bottleneck constitute mitigation?

Proposals to create two continuous flow lanes on Green Street appear dubious. Considerable curbside parking in the Sidney-to-Pearl Street block would be lost and should be added

to the total project parking shortfall. Currently, flows across River Street are restricted by angled turning vehicles coming from Pleasant Street and by buses and parked cars on Green Street that limit approach flows to one lane. One of these lanes is an actual bus stop (not a layover space) and should not be deleted without clear definition of where the stop can be relocated.

The connector road across the railroad tracks could have mixed results. If traffic from Cambridgeport is syphoned from Waverly Street to Vassar Street in the afternoon, this should help the neighborhood. Option C would tend to move traffic towards Amesbury Street to go either way on Memorial Drive, thus avoiding both Mass. Avenue and MIT, and Kendall Square. Option D would tend to provide relief for traffic seeking to bypass signal delays on Mass. Ave. With all options, consideration should be given to making the connector one-way east-bound so that it carries traffic out of Cambridgeport and not into it.

The one-way pair of Albany and Vassar Streets appears problematic and proposes to make Vassar a four-lane roadway at one point. Trucks at Sterritt Lumber on Albany Street can sometimes block the roadway during loading operations, and the new one-way pattern may tend to induce more traffic to continue into Cambridgeport via Albany than to avoid the area by staying on Vassar Street.

With the new design for Lafayette Square (Mass + Main/Sidney/Columbia), how is the present connection between Columbia and Sidney to be provided? Is this turn to be prohibited? The alternative route of turning left at Bishop Allen Drive, then sharp right onto Main appears quite awkward.

Demand management strategies may have mixed results. The shuttle bus concept appears the most useful. However, "project parking supply and management" could be of questionable effectiveness, given the substantial parking shortfall. Any new express bus from outlying suburbs would be required to get thorough the restrictive traffic cordon of bottlenecks around Cambridgeport. A new rapid transit extension through Cambridge is about as likely as a reincarnation of the Inner Belt. The fact that the State may be studying the option means very little.

Local Street Impacts

Some of the mitigation proposals may offer beneficial or negative results for residential areas. Generally, there is not a consistent pattern of trying to protect local streets from traffic. Discussion on Page IV-A-20 is quite brief.

Some of the difficulty may relate to the traffic profession being dominated by the perceptions of engineers and

in particular by civil engineers. There is a tendency to perceive a street as merely a work of civil engineering. A local street is also a place for monthly street sweeping, temporary garbage storage and pick-up on Fridays, of trees and sidewalks, drains and sign poles, of summer games for kids, winter snow shoveling for adults, movement for pedestrians and bicycles, the stage for family observations on hot summer nights, for neighborly interactions, chats, and gossip/small talk. The street is the way to the store for the elderly and the kids. It is the route of the mailman and UPS, as well as a makeshift space to work on your car. It can include such urban wildlife as squirrels, cats, dogs, late night party goers, and even an occasional politician during an election year. Neighborhood streets should be seen for their contribution to urban life and not solely as engineering projects.

For example, on April 16, a brief 15-minute traffic count of the middle of Hamilton Street just before 6 totalled 17 cars, four pedestrians, one bicycle, and one cat. The one element of activity that was missing was the local kids playing ball. Usually what they do is use the only available open space on the block -- the street -- to get off a play or two before a car comes. At the counted rate of about 70 cars an hour, there is a minute or so between cars on the average. The cars and the kids share the street in an uneasy truce, with parked cars sometimes taking a bit of a battering from errant footballs.

As more and more open lots are filled with houses, and kids on different streets choose their preferred turf, the street becomes an important part of the "open space" of Cambridgeport. Indeed, the street is the only place where a kid or active adult can get out and run, since most lots and sidewalks are limited by fences, posts and other barriers. Increasing traffic above 70 cars an hour precludes use for playing games, and instead makes local streets much more like Putnam Avenue, a traffic arterial with few social functions.

The robot engineer might look at Hamilton Street and conclude that it has one lane and that capacity for such an urban street should be about 1500 cars an hour. Should we start worrying about impacts when traffic reaches 70 cars an hour or only when traffic flows indicate possible capacity problems?

An example of what can go wrong with the engineering approach is on page IV-A-71 of the DEIR. Retiming of four signals along Putnam Avenue was suggested to "require frequent stops" during peak hours, with the goal of deterring through traffic. However, the traffic would simply divert to alternative routes, and indeed may be already doing so, since drivers don't like waiting at traffic signals. Possible

alternative routes are Perry, McTernan, and Hamilton Streets to get to Magazine and thus face only the one signal at Magazine and Putnam.

Another example is the creation of a one-way eastbound section of Putnam Avenue, near River Street or between Allston and Pleasant Street. The first option would probably send more traffic down narrow residential Pleasant Street to Howard Street, in order to get to Western Avenue. The second option would shunt traffic into Pleasant Street to the reversed Allston Street connection, again along primarily residential streets. There is an active playground on the corner of Pleasant and Allston. (Allston between Pleasant and Sidney would probably benefit from reduced traffic which now uses Allston as an eastbound bypass of the four signals on Putnam.)

INTERSECTION ACCIDENT TOTALS + RATES per 100 million approaching vehicles, for year 1984

TABLE THREE

1 = # of years of accident records 1.00 traffic adjustment, if ADT below 8.5 = Peak Hour percentage of ADT is actually WEEKDAY traffic.

INTERSECTION	APPROACH #1 NORTH		APPROACH #2 EAST		APPROACH #3 SOUTH		APPROACH #4 WEST		TOTAL ACCIDENTS		INJURY ACCIDENT		FATAL ACCIDENT	
	ADT	Pk.Hr	ADT	Pk.Hr	ADT	Pk.Hr	ADT	Pk.Hr	#	RATE	#	RATE	#	RATE
3 Alewife area rotaries	(1978-80 data, average per location)													
3 Major Alewife signals									66	300	5	25	0	.00
7 Minor Alewife signals									55	300	9	48	0	.00
1. Mass.Ave. & Albany St.	8353	710	22150	1883	6141	522	22150	1883	5	170	3	39	0	.00
2. Mass.Ave. & Brookline	3506	298	24140	2052	5729	487	24140	2052	4	37	0	0	0	.00
3. Mass.Ave. & Landsdowne	0	0	22150	1883	1176	100	22150	1883	8	96	1	12	0	.00
4. Mass.Ave. & Main/Sidney	9700	825	24140	2052	5212	443	22150	1883	5	45	1	9	0	.00
5. Mass.Ave & Vassar St.	7682	653	25830	2196	7259	617	25830	2196	17	140	1	8	0	.00
6. Sidney & Allston St.	4706	400	588	50	4706	400	1176	100	1	49	0	0	0	.00
7. Sidney & Erie St.	4706	400	2353	200	4706	400	1176	100	5	212	2	85	0	.00
8. Sidney & Franklin St.	4706	400	588	50	4706	400	2353	200	2	89	0	0	0	.00
9. Sidney & Green St.	6529	555	1812	154	6529	555	2682	228	6	187	1	31	0	.00
10. Sidney & Henry St.	5529	470	2353	200	5529	470	7412	630	1	26	0	0	0	.00
11. Sidney & Pacific St.	4847	412	1224	104	4847	412	459	39	6	289	3	144	0	.00
12. Sidney & Putnam Ave.	5541	471	1365	116	4529	385	4459	379	3	103	0	0	0	.00
13. Brookline & Auburn St.	5882	500	0	0	5882	500	588	50	3	133	0	0	0	.00
14. Brookline & Erie St.	5882	500	1176	100	5882	500	1176	100	1	39	0	0	0	.00
15. Brookline & Franklin	5882	500	588	50	5882	500	2353	200	4	149	1	37	0	.00
16. Brookline & Green St.	5882	500	2729	232	5882	500	4706	400	7	200	1	29	0	.00
17. Brookline & Henry St.	6471	550	7412	630	6612	562	165	14	3	80	1	27	0	.00
18. Brookline & Putnam Ave	7059	600	3271	278	11880	1010	4459	379	6	123	0	0	0	.00
19. Vassar St. & Mem. Drive	39750	3379	0	0	39750	600	7059	600	6	38	0	0	0	.00
20. Vassar St. & Amesbury	7059	600	588	50	7059	600	0	0	3	112	1	37	0	.00
21. Vassar St. & Audrey	7059	600	588	50	7059	600	0	0	4	149	1	37	0	.00

Accidents

The DEIR summarizes the accident experience at 21 intersections in the study area. Unfortunately, accident rates were not calculated. Table Three shows that while many accidents happen on busy Mass. Avenue, the highest accident rates occur along Sidney Street. These rates should be reviewed and included in the final EIR.

TRANSIT IMPACTS

The DEIR makes an important contribution by including the subject of transit. This topic was omitted in the MEPA scope. Therefore, the proponent and consultant deserve credit for voluntarily addressing the transit question to the extent done in the DEIR.

But, the DEIR transit analysis is still too brief and unduly optimistic. The DEIR says, in effect, that the streets will be a mess but that the Red Line will be in excellent shape. The crux of the problem is the assertion that the existing Red Line is operating with ridership at only 63% of capacity, with plenty of capacity for growth from Cambridge and Boston development. This analysis did not include any assessment of the impacts of other Boston-area development on transit use. Veteran MBTA riders will question such raw optimism and wonder how in just a year or two the MBTA will be in excellent shape compared to the history of deteriorating and erratic service over the past two decades.

Where is the transit system bottleneck? How is the V/C figure of 0.63 reconciled with the evident congestion and delay now encountered on the Red Line? Is the MBTA meeting its service schedules? How much will the added new Red Line cars actually improve capacity? Or will they simply serve to bring the Red Line closer to the current scheduled (but undelivered) capacity?

Transit improvements will help, but cannot solve the massive auto-dependence of most development schemes. Any scheme which adds traffic is a step backward, both for the neighborhoods and for practical operations.

EIRs have in the past tended to develop a pattern of exaggerating the performance of the Boston transit system. The first EIR to assess transit impacts (Dewey Square Office Building, EOEA #3810, October, 1980) calculated V/Cs of about 0.60 for the Red Line at South Station during actual peak hour operations. The EIR for the 500 Boylston Street project in Boston claimed that relocation of the Orange Line would result in all Green Line trains operating half-empty. Part of the

problem is that we have traffic engineers trying to analyze transit performance. But the larger problem is the inability of public agencies (BRA, Cambridge CDD, MBTA) to provide better analysis or offer any critique of the fledgling studies by traffic consultants. If anything is to function on the Simplex site, it desperately needs excellent transit analysis and service. The EIR offers a very good place to start.

The final EIR should seek to make a practical contribution to finding ways to provide transportation mitigation, not by making major changes to Cambridge streets but rather by offering suggestions for improved service on the MBTA. If an EIR can recommend street alterations and signal timing changes, why not ways to improve the MBTA? As a minimum, a description of how the Red Line functioned 20-30 years ago would be a useful contribution, because the system worked better in past years and carried more people. We could do a whole lot worse than copying the proven methods of the past.

A capacity analysis of the Red Line should be carried out, comparing existing operations, future full service on the Alewife Branch, and past studies such as the 1926 analysis ("Report on Improved Transportation Facilities in the Boston Metropolitan District", by the State Division of Metropolitan Planning, December, 1926) and other studies in the 1950's and 1960's. The quality of the traffic analysis in most EIRs is at least 100 times better than the quality of the transit analysis. So why not make the Final EIR for the Mass. Ave./ Sidney St. proposal a model for good transit analysis and mitigation? If the Red Line were improved enough to get other people out of their cars, this might allow more room on the roads for the development traffic. Transit is not a cure-all, but it certainly can be operated with more efficiency than the current system.

NEW ALTERNATIVES

It does not seem to be worthwhile to pursue detailed assessment of the various development options that have been presented in the DEIR. Calculation of actual queue lengths and estimations of what actually happens to excessive traffic and parking demand should be provided in the Final EIR if the proponent continues to insist on intense development for the Simplex site.

Since the No-Build condition represents excessive traffic congestion, all of the development proposals offered to date are excessively intense from a traffic and community viewpoint. The DEIR has helped to demonstrate the severity of the No-Build case and the need to come up with a new alternative plan for the Simplex site.

Such a new alternative should seek to serve as a traffic sponge, not a traffic generator. If it can also relieve housing pressures rather than worsen them, all the better. All indicators point to the need for a major housing plan, with no traffic generators such as office space. The housing would serve as a sponge to soak up trips from Kendall and Lechmere which otherwise would seek to pass through Cambridgeport or indirectly end up looking for housing in Cambridgeport. Clearly, it makes no sense to develop the Simplex land either for offices that have inadequate transportation access. Office development at Simplex makes no sense at all.

The new plan should contain enough retail to serve local community needs in the eastern half of the city, but not enough to generate regional flows. The need for another hotel in Cambridge is indeed questionable. Why is a hotel reasonable use for the Simplex land, when traffic and transit access is such a problem? The industrial portions of this site can be assumed to operate on a 7 to 3 shift and would thus miss the worst Cambridge traffic congestion. Mitigation would still be required, such as a minibus shuttle loop and improved operations of the Red Line.

Now is the time to abandon the irrational, traffic-intense alternatives of the past and seek practical residential development through an EIR which explicitly considers such an alternative, so that all can judge the differences in impacts between housing and office development.

COMMENTS ON SECTION IV A: TRANSPORTATION - PARKING IMPACTS

The parking analysis presented in the DEIR is extremely cursory. It does not address either the questions posed in the MEPA scope or the impacts that will occur as a result of lack of adequate parking.

The MEPA scope raises three primary issues to be addressed:

- (1) Is the parking supply adequate to meet the demand generated by the project?
- (2) How does the parking conform to zoning?
- (3) How does the parking comply with the Cambridge parking freeze?

The first question is not answered directly, but the data provided does clearly indicate that the parking provided does not meet the demand.

As to the second question, the parking provided is roughly the amount permitted under the site's current zoning. There is no analysis of the parking provided in relation to the zoning code requirements for residential, office, retail, R & D, and hotel uses.

The third question is not addressed in any fashion by the DEIR.

Documentation of Existing Conditions

The DEIR addresses existing parking conditions only within the largely vacant site itself. Clearly, on a piece of largely vacant land there are not problems with inadequate parking. If the proponent had examined the immediate neighborhood of the site, however, the existing parking situation would be very different.

There are three areas that should have been examined with respect to existing conditions:

- (1) The Cambridgeport residential neighborhood;
- (2) The Central Square retail area; and
- (3) The MIT campus.

The residential area adjacent to the site already experiences parking problems due almost solely to resident parking. As recent discussions of a proposed housing development on Lopez Street have indicated, there are not enough parking spaces on that street to accommodate current residents. This same situation exists on other residential streets directly adjacent to the project side. In the recent

past, residents of Area 4 found that commuters who could not or would not use the Draper Laboratory garage (Portland and Broadway, Tier II Secondary Study Area) parked on nearby residential streets. Without a review of existing conditions, there is no basis for assessing project impacts.

The Central Square retail area has several municipal parking areas; however, merchants in Central Square have indicated their feeling that parking is inadequate at present. Spillover parking by both employees and shoppers presently occurs on the streets parallel to Massachusetts Avenue. Information on these conditions is readily available from the Cambridge Community Development Department.

MIT, which lies just east of the project area, does not have enough parking for its employees and students. The small MIT lot that will be displaced by the project is only a symptom of a much larger parking problem which should be addressed by the EIR.

Conditions around the site indicate that there is no available parking for the proposed development outside of the project site.

Project Impacts

There is a very significant parking shortfall for the project. With the proponent's preferred alternative there is a parking shortfall of 930 spaces under optimum conditions, conditions based on the parking-constrained estimate that assumes an extremely optimistic transit use rate of 40%. Based on a transit use rate more in line with existing Central Square/MIT/Kendall Square conditions, the shortfall is 1,600 spaces.

While the DEIR makes it clear that the traffic analysis attempts to account for all of the cars that will come to the site, there is no environmental assessment made of the impacts of either the parking to be provided or the unmet parking demand.

No documentation is provided comparing the assumptions used with respect to transit use and vehicle occupancy rates with conditions actually being experienced by other developments in similar areas such as Kendall Square (better transit access) and East Cambridge. These existing conditions, some within the secondary study area, should be reviewed to see whether the stated parking demands offer a reasonable basis for analysis.

Parking impacts must be assessed with respect to at least the following basic issues:

1. Parking on local streets: even with a resident sticker program, the estimated 1,600 Cambridge residents who will work in the project area (based on the proponent's estimate that 20% of the employees will be Cambridge residents) will be able to park legally on Cambridgeport streets. Cambridge residents are not likely to use transit for short rides to work if free, legal parking is available.
2. Extra traffic caused by drivers who cannot find parking.
3. Air quality impacts caused by cars idling outside parking garages while waiting for parking spaces: the Post Office Square garage in Boston is a good example of what happens when parking supply does not meet demand.
4. Pressure on nearby land to be converted to parking use: this is particularly an issue with respect to the vacant land south of Pacific Street owned by MIT. If the proponent hopes to use this land for additional parking, it should be stated in the EIR and the impacts of this use should be clearly addressed.
5. Impacts of structured parking garages on residential development: as noted in the MEPA scope, the developer's kit issued by MIT suggested that parking garages should be located away from existing and new housing. Seventy of the 110 dwelling units in the preferred alternative face directly onto parking structures, at a distance of less than 75 feet between residential windows and garage walls. What are the impacts of this proximity on the quality of the housing units, from aesthetic, air quality, and noise quality viewpoints?

COMMENTS ON SECTION IV-B: AIR QUALITY

Considering the size and density of the resident and working populations that will be affected by the proposed Mass. Ave./Sidney St. development, the analysis of air quality effects, Section IV-B, is inadequate in its breadth, unsatisfactory in its methodology and does not fulfill the requirements for study, as specified by the Secretary of Environmental Affairs in EOE #5487 (see. p. 8 Appendix B, DEIR).

Scope

The Scope for the air quality analysis does not specify that only carbon monoxide be modelled. Proponent justifies this narrowing of the Scope with the statement: "Of the various air pollutants emitted, CO is used in the analysis as an indicator of roadway air pollution levels, since it is the most abundant and persistent pollutant emitted by motor vehicles. Also, since CO is a non-reactive substance, its concentration in the air can be easily predicted." (IV-B-1, DEIR vol. 1) While it is true that CO is easier to model than reactive pollutants, such as NO₂, it is quite possible to model the other primary pollutants. Moreover, the threshold for health effects is much higher for CO than for other pollutants. The current standard for CO is 35 ppm 8 hour average. For NO₂ it is 0.1 ppm 24 hour average.¹ Since the standard will be exceeded at such low concentrations for NO₂, of what significance is it that CO is more abundant?

Furthermore, the selection of CO as the key pollutant has the effect of minimizing the apparent air quality impact of the Mass. Ave./Sidney St. development. The reason for this is that current and projected automotive exhaust technologies -- enforced by the Commonwealth's inspection program -- focus exclusively on CO and hydrocarbon emissions. While proponent can utilize the MOBILE-3 emissions model to predict a 50% decrease in CO emissions from now until year 2000, the same cannot be done for NO₂. In fact, over the past seven years average NO₂ concentrations in the Boston area have been rising, while CO has been falling. Some locations already suffer exceedances.² NO₂ is heavier than CO, or air, and is less readily dispersed from intersections -- especially under stable meteorological conditions, with low traffic turbulence due to congestion. At the very least, NO₂ should have been modelled along with CO, in the same detail. Given its serious health effects³ and high concentrations in automotive exhaust, why was it omitted from consideration?

Methodology

Errors were made in applying the CALINE-3 model to the environment of the Mass. Ave./Sidney St. site. In addition, a significant amount of data relevant to an evaluation of emission and dispersion modelling was omitted from the DEIR. And interpretation of final model output is inadequate and misleading.

CALINE-3

1. Reference is made on p. 4 of Appendix E to a source (footnote 2) for a method of calculating queue lengths at signalized, over-capacity intersections. However, the DEIR nowhere reports the results of such calculations. What queue lengths are assumed at intersections studied in the air quality section? Do these queue lengths appear realistic, given block lengths and traffic loads at nearby intersections? Do these queue lengths indicate the possibility of gridlock and the resulting additional air quality impacts?
2. It is stated on p. 4 of Appendix E that in calculating capacities for unsignalized intersections, a "critical gap time" of 6 seconds was used, and that this figure was "measured in field surveys." Who did these surveys? When were they performed -- time of day, day of week, month, year? Where were they performed -- at the intersections being studied? What was the actual measured data? None of this information appears in the DEIR.
3. Not all of the intersections studied in the air quality section are suitable for the CALINE-3 dispersion model. As the developers of CALINE-3 have clearly noted, "The model should not be used for streets within a central business district where the so-called street canyon effect is significant."⁴ It is clear that Central Square is a central business district, and that under either Alternative 1 or the ENF plan, University Park would also be such a district. But would the canyon effect be significant here? Again according to CALINE-3's developers, "The users should note that CALINE-3 is not a street canyon model, and therefore should not be used to model central business district intersections (i.e., surrounded by buildings of four stories or more.)"⁵ (emphasis added) After year 2000, under either Alternative 1 or the ENF plan, five of the intersections modelled in the air quality section will satisfy the above definition. These intersections are Sidney/Mass. Ave., Sidney/Green St., Main/Mass. Ave., Vassar/Mass. Ave. and Albany/Mass. Ave. How can we expect realistic numbers from applying a model to a situation for which it is admittedly inappropriate? Why was the

CALINE-3 model chosen over the MIDWAY-2 model? Given the inappropriateness of CALINE-3 for some intersections, a discussion of its use would be in order.

Note that the problem in applying CALINE-3 here is that the model assumes minimal boundary constraints for horizontal dispersion. In a central business district, such boundary constraints are significant, and decrease the rate of horizontal dispersion, at least under the assumed meteorological conditions. Therefore, we would expect actual pollutant concentrations to be higher than those predicted by CALINE-3. How much higher should the concentrations be? Why isn't a quantitative analysis of this effect included in the DEIR?

4. One of the inputs to the CALINE-3 model is "highway width." It is suggested that for most applications, three meters on either side of the outermost travel lanes be included in this width, and this is what proponent has done in the DEIR. Is this addition of six meters to street width appropriate for all the intersections in the air quality section? As the authors of CALINE-3 have noted,

"By widening the highway, the residence time over the mixing zone and the initial horizontal dispersion are enhanced. Given a constant source strength, and a receptor distance referenced from the downwind edge of the roadway, the model consistently predicts lower concentrations for greater highway widths. This effect is most apparent for receptors near the roadway edge."⁶
(emphasis added)

By "widening the highway," the DEIR has effectively decreased the predicted CO concentrations at receptors. How much have these concentrations been decreased? Are these reductions justifiable?

As vertical dispersion increases, the concentrations predicted at ground (source) level will decrease. One of the major driving forces behind vertical dispersion in CALINE-3 is air turbulence due to traffic flow. The parameter which reflects vertical dispersion in the model is SGZ1, and it is related to street width by $SGZ1 = 1.8 + (0.11 \times TR)$ where $TR = W2/U$ is the mixing zone residence time, $W2 = 1/2$ street width, and U is the wind speed (assumed by the DEIR to be 1 meter/second).⁷ For a three-lane street, with three meters added on each side, the value of $W2$ is about 6m., and $SGZ1 \approx 2.5$ meters. SGZ1 is an extremely important parameter. "The user should note that SGZ1 accounts for all the enhanced dispersion over and immediately downwind of the roadway."⁸

Note, however, that SGZ1 depends on significant turbulence due to traffic flow. What happens if such traffic flow is drastically reduced? According to the authors of CALINE -3,

"It has been suggested that the model could be used for evaluating parking lot impacts. If the user wishes to run the model to simulate dispersions from a parking lot, it is recommended that SGZ1 be kept constant at 1 meter, and that the mixing zone width not be increased by 3 meters on each side as in the normal free flow situation. This is because the slow-moving vehicles within a parking lot will impart much less initial dispersion to their exhaust gases."⁹ (emphasis added)

Traffic movement at a downtown intersection that has a V/C ratio of 1.4 or 1.5 is much closer to parking lot conditions than to free-flow highway conditions. Therefore, for intersections studied in the air quality section that are seriously overloaded (say, $V/C \approx 1.2$), the CALINE-3 model should be run again, without adding six meters to road width, and using an SGZ1 of 1. The higher resultant CO concentrations would be more realistic.

MOBILE-3

1. The MOBILE-3 model requires the user to input data concerning the mix of motor vehicle types in the area being studied. Although the DEIR uses local (i.e., state) data for the age distribution of vehicles, it relies on the model's default values for motor vehicle type mix. Why is Registry of Motor Vehicles data not used? (See Tables I and II, Appendix E of DEIR.)
2. In order to use MOBILE-3 to model excess idle-mode emissions with a cold/hot start vehicle mix, the DEIR makes the approximation that emissions at 5 mph are equal to emissions at 0 mph. What is the justification for this approximation? What is the expected error introduced by the approximation? Considering the fact that vehicles at overloaded intersections will spend a significant amount of time in idle-mode, what is the effect on the final data output of MOBILE-3 and CALINE-3 of this idle speed approximation? (See p. 14, Appendix E.)

Quantification of Model Error

Any statistical model of the real world has some degree

of error inherent in it. While this is unavoidable, there are accepted statistical methods for quantitatively analyzing such system error bands. Whether explicitly stated or not, output from any model represents a probability that values will fall (in the real world) within a certain range. For example, if a model has an error band of $\pm 30\%$, then a prediction of 5.5 ppm at a receptor may actually mean that there is a 90% probability that actual concentrations will fall between 3.9 ppm and 7.1 ppm. No model can predict exact pollutant concentrations with any useful probability.

Why does the DEIR not make, or refer to, any estimation of error inherent in the MOBILE-3 or CALINE-3 models? Why isn't final data interpreted so as to explicitly include system error? Final model CO concentrations should be presented as probabilities that actual CO levels will fall within a certain range. The omission of quantified error from the model output makes a mockery of statistical modelling.

In fact, the authors of CALINE-3 have attempted to quantify the correlation of the model with actual measured values.¹⁰ A cursory examination of their data indicates that CALINE-3's results are reliable to within about ± 15 to 20%. This is actually not bad as models go. When coupled with error due to MOBILE-3, we might expect an error band of about ± 20 -25% in the final output. Such error has significant implications for the health of people living and working in Cambridgeport. For example, an actual one-hour CO value of 9.0 ppm may in fact be in acceptable agreement with a model prediction of 7.2 ppm. That is, when the model says 7.2 ppm, there is good probability that the one-hour CO standard will be exceeded.

Why is this type of model output interpretation not presented by the DEIR?

Summary

In short, proponent has, through a series of misapplications, simplifications, and misrepresentations of modelling data, presented an analysis that seriously underestimates projected CO concentrations for the year 2000, especially under Alternative 1 and the ENF plan.

Additionally, proponent has chosen to narrow the Scope for air quality, ignoring all but CO -- the pollutant that puts the developer in the best light. In particular, NO₂ is disregarded totally, although it is an increasing problem in the greater Boston area. Also, Table 1, Appendix E shows an increased percentage of diesel-powered vehicles, so that diesel emissions should also be studied.

Proponent should be required to model NO₂ levels and diesel exhaust components (particulates) between now and

year 2000, and should run the CO models again after correcting the deficiencies enumerated above. Also, because a significant portion of the Mass. Ave./Sidney St. project will be completed within two to four years, proponent should model NO₂ and CO for year 1990 as well as 2000.

Footnotes

- ¹Lindvall, Thomas, M.D., "Recommendations for Air Quality Standards for NO₂ and O₃," Scand J Work Environ Health II (1985): suppl 3, 3-9.
- ²Santall, Kenneth, "NO₂ Trends Analysis, 1978-84" (with projections to 1985), Division of Air Quality Control, Mass. DEQE.
- ³Lindvall, Thomas, M.D., "Health Effects of NO₂ and Oxidants," Scand J Work Environ Health II (1985): suppl 3, 10-28.
- ⁴California Department of Transportation, Office of Transportation Laboratory, "CALINE-3 -- a Versatile Dispersion Model for Predicting Air Pollutant Levels Near Highways and Arterial Streets," p. 98, Sec. 8.1.8.
- ⁵Ibid., p. 115, Sec. 8.5.3.
- ⁶Ibid., p. 45, Sec. 6.4.
- ⁷Ibid., p. 24.
- ⁸Ibid., pp. 24-25.
- ⁹Ibid., p. 37.
- ¹⁰Ibid., Sec. 7.0.

COMMENTS ON SECTION IV C: NOISE AND NOISE ANALYSIS

Overview

For a project of this size and potential for neighborhood environmental concerns, the analyses and results for noise impacts as presented in the DEIR are inadequate, superficial, and do not address the specific requirements outlined in the MEPA Scope. Where comparisons are provided for "acceptability" of projected noise levels, the standards used are inappropriate. The noise measurements carried out were extremely limited and were not designed to provide a reasonable basis for establishing the time-of-day or the day-to-day variability of ambient noise levels. No quantitative analysis of construction noise or vibration was undertaken. Mitigation measures are qualitative only and are generally based on misinformation or on a lack of technical understanding.

Specific Comments

1. EPA Guideline and Criteria (Page IV C-2)

The relevant EPA document, (Information on Levels of Environmental Noise Requisite to Protect Public Health & Welfare with an Adequate Margin of Safety, EPA, 1974. Cover Page and Table I attached.), indicates the criteria for noise acceptability. The DEIR states that $Leq(24)=70$ dBA is an "acceptable" level of noise. This level, as indicated in Table I, is a guideline for acceptability based on hearing loss. Guidelines related to annoyance and interference for outdoor activities are the commonly used criteria in EIS and EIR studies for assessing community impacts. These noise levels of 55 dBA, as indicated in the Table, are considerably lower than 70 dBA.

2. Noise Measurement Sites (Page IV C-4)

How were these sites chosen? They do not appear to be representative of the project area, particularly of the easternmost portion. They are, however, likely to have the highest ambient noise levels at the present time, and they show the least incremental noise impact caused by project-related construction, development, and traffic activity.

3. Noise Measurement Times (Page IV C-6)

Why were both measurement days Wednesdays? Why were all measurements taken only between 1:15 and 3:10? Why weren't measurements made at the assumed "worst hour" time period (5 to 6)? Why were there no measurements at night? The design of the measurement program in terms of established statistical testing techniques is unsatisfactory.

4. Construction Noise and Vibration (Page IV C-10)

The projection of noise due to construction should be quantitative and should provide estimates of project-related noise levels at several noise-sensitive areas in the adjacent residential neighborhood. EPA Guidelines present a reasonable, systematic, and widely-used methodology for estimating construction noise, based on the number and types of construction equipment, their power levels, usage factors, time of day, and distance to sensitive receptors. Such an analysis would provide a defensible basis for construction noise projections for EIR purposes.

5. Construction Noise Mitigation (Page IV C-11)

It is suggested that fences along the construction area perimeter will attenuate construction noise. Such fences, or barriers, are effective only for people who may be crouching along the fence. The DEIR statement that such fencing will "serve to shield the community from construction noise" indicates a lack of understanding of the effectiveness of noise barrier systems.

6. Pile Driving Noise and Vibration (Page IV C-11)

What are the "acceptable limits" for ground-transmitted vibrations? What would the "re-evaluation of the technique used (if ground vibrations are excessive)" entail? What other methods are possible? So-called "sonic" pile-driving methods are frequently quoted as alternative methods, but such equipment is not available at the present time from anyone.

7. Mitigation Measures (Page IV C-12)

Discussion of the effectiveness of barriers as a noise mitigation measure in this part of the DEIR again illustrates a lack of understanding of how such barriers function acoustically.

**INFORMATION ON LEVELS OF
ENVIRONMENTAL NOISE
REQUISITE TO PROTECT
PUBLIC HEALTH AND WELFARE
WITH AN ADEQUATE MARGIN
OF SAFETY**

MARCH 1974

**PREPARED BY
THE U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF NOISE ABATEMENT AND CONTROL**

**This document has been approved for general
availability. It does not constitute a standard,
specification, or regulation.**

Table 1
SUMMARY OF NOISE LEVELS IDENTIFIED AS REQUISITE TO PROTECT PUBLIC
HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY
 (see Table 4 for detailed description)

EFFECT	LEVEL	AREA
Hearing Loss	$L_{eq(24)} \leq 70$ dB	All areas
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq(24)} \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{dn} \leq 45$ dB	Indoor residential areas
	$L_{eq(24)} \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Explanation of Table 1:

1. Detailed discussions of the terms L_{dn} and L_{eq} appear later in the document. Briefly, $L_{eq(24)}$ represents the sound energy averaged over a 24-hour period while L_{dn} represents the L_{eq} with a 10 dB nighttime weighting.
2. The hearing loss level identified here represents annual averages of the daily level over a period of forty years. (These are energy averages, not to be confused with arithmetic averages.)
3. Relationship of an $L_{eq(24)}$ of 70 dB to higher exposure levels.

EPA has determined that for purposes of hearing conservation alone, a level which is protective of that segment of the population at or below the 96th percentile will protect virtually the entire population. This level has been calculated to be an L_{eq} of 70 dB over a 24-hour day.

COMMENTS ON SECTION IV-F: OPEN SPACE

As a condition for granting a waiver for the KLH renovation MEPA specified that,

"It (EIR) will analyze a 20-30% reduced development alternative. This alternative should endeavor to incorporate the key concepts promoted by the city and neighborhood plans."

and that,

"Areas of controversy should receive particular attention."

The Open Space portion of the Scope poses the following issues:

"To what extent is the proposal for open space responsive to neighborhood and city needs?"

"All impacts should be discussed in sufficient detail to allow a comparative analysis of the alternative open space plans."

"The active and passive open space needs of the neighborhood and the city should be evaluated to put into perspective the pluses and minuses of the open space proposal. Opportunities to meet neighborhood and city open space needs should be recommended."

Comments on Responsiveness to the MEPA Scope

The DEIR does not answer the specific questions and issues posed by the Scope, and the proponent's plan does not answer the needs of either the neighborhood or the city with respect to open space.

1. The reduced-density alternative has not been developed as an "alternative" to the proponent's plan. Because no new plan was developed, the proponent has not addressed in any fashion the requirement to "incorporate the key concepts promoted by the city and neighborhood plans."
2. Open space is clearly an area of controversy, and is specifically noted as such in the MEPA Scope. The omission of any development of alternatives related to open space is a significant deficiency in the DEIR.
3. No comparative analysis of serious open space alternatives has been carried out because there are no open space alternatives.

4. While the active and passive open space needs of the city and the neighborhood are evaluated, there is no evaluation of the proponent's actual contribution to these needs.

Comments on Responsiveness to Neighborhood and City Needs and Articulated Open Space Goals

The proponent states that six new acres of open space will be created by the preferred alternative. However, of these six acres only one acre (Auburn Park) can be considered a real contribution to neighborhood open space, and two acres (University Park Common) can be considered of some value to anyone other than employees of University Park tenants. The most serious lack in the open space plans for the development is the very minor addition to the active open space resources of the city and employees who work in Cambridge.

Additional analysis of the social dimensions of the proposed open space is needed. Such analysis is entirely lacking in the DEIR. It should deal with both the location and uses fronting on the green space, as well as its specific character and the support provided (or not provided) for various activities. Without this type of analysis no convincing claims can be made for the community benefits of the proposed open space.

Many studies show (Oscar Newman, Claire Cooper, etc.) that small open spaces are claimed as the social territory of those who live around them. Others, not from the immediate neighborhood, will tend to feel excluded and will not use that space. For instance, Auburn Park, given its size, location, and proposed character, would be used primarily by those living in new or existing housing on Brookline Street and the immediate vicinity. It would serve the larger community marginally, if at all.

The so-called "Common," and other open spaces shown in the plan, are typical of green areas employed in suburban office parks. They are there to provide an attractive setting for the office buildings and a pleasant outlook for management personnel in offices with windows. Such spaces may be important to make this site marketable for office use, but will not be welcoming or comfortable for neighborhood residents. Their use will be limited primarily to office workers at lunch time in good weather. Use for informal, active sports will surely not be tolerated by University Park management. On evenings and weekends, surrounded by empty office buildings, these spaces will be forbidding and perhaps dangerous. The name "Common," which means shared by a community, is a misnomer.

The Cambridge Community Development Department's Cambridgeport Revitalization Plan says:

"City-wide, the most clearly defined recreational need is for a two-to-five-acre park with playing fields and facilities for organized sports. The Cambridgeport Revitalization area is one of the few places in Cambridge where such a large tract of underutilized land is available."

The proponent is proposing the addition of a very significant number of employees to the Cambridgeport area. As stated in at least one letter of comment received by MEPA during the scoping process, a very clear need in the city is for more playing fields which can be used by employee sports leagues. At the present time not all the requests for playing fields can be filled.

Surely, one of the benefits which the proponent will wish to offer to future tenants is access to recreational facilities. Forest City has no plans to provide any of those amenities for the anticipated 8,000 employees. No active recreational facilities for adults are proposed anywhere on the site.

One of the key neighborhood goals for the project site is additional active open space. The one-acre park in the proponent's preferred alternative will not add significantly to the neighborhood inventory of open space, and, as stated by the proponent, "will be equipped with recreational equipment for young children" (p. IV-F-8). This does not "endeavor to incorporate the key concepts promoted by the city and neighborhood plans" as requested in the Scope. The reduced density alternative does even less to fulfill this request, as it assumes the ENF plan which has even less active open space.

A second important neighborhood goal for the site is that it, and its open space, be clearly integrated parts of the Cambridgeport neighborhood. While the preferred alternative achieves this to a greater extent than the ENF Plan, the Proponent has still made no serious attempt to integrate the proposed development into the existing Cambridgeport neighborhood. By clearly dividing the open space into a "neighborhood" park and office/retail related areas, the plan will increase the isolation of the development from the neighborhood.

Active, adult-oriented open space could serve to bring residents and employees into contact (e.g., running tracks, tennis courts, playing fields, or ice rinks would all be used by both residents and employees) if properly sited and designed.

The developer claims that the office structures fronting on the "Common" will have retail on the ground floors. Except possibly for one or two restaurants, this is highly unlikely. Except at the extreme north end of the "Common," retail cannot be assumed to help activate this otherwise dead space, or to make it welcoming to the community.

Mitigating Measures

There are many mitigating measures that could be employed. Some can be gleaned from examining carefully, and inquiring about, the city and neighborhood plans.

Two other possible mitigating measures that could result in a three-acre gain in "beneficial" open space are:

1. Instead of "R & D," housing should be developed at least along the west side of the "Common." This would in itself transform this space into a true commons, since it would now have housing, retail and office frontage, guaranteeing that it would be used both during the day, in the evenings and on the week-ends. It could incorporate children's and adult's play areas and still provide an attractive setting for offices, as Riverside Press Park does on Memorial Drive.
2. The acre of space used for the "Landsdowne Quadrangle," could be relocated to the southern end of the "Common" -- between Brookline, Sidney, Pilgrim, and Pacific Streets, replacing the proposed parking and office structures. Along with the southern end of the "Common," this space could then be developed as an active recreation area, with courts and fields used by office workers at lunch times or after work and by neighborhood residents at other times. This would be near the proposed health club, and thus accessible to lockers and showers for office workers.

A new layout as suggested by the City Plan, the Neighborhood Plan, and these mitigating measures would result in a gain of open space that can properly be claimed to be of some benefit to the community.

COMMENTS ON SECTION IV-I: GROWTH AND DEVELOPMENT

This section of the DEIR is entirely inadequate both in its methodology and its conclusions. This superficial analysis is extremely misleading. It ignores or glosses over some of the most potent and wrenching impacts of this massive development on the Cambridgeport and Area 4 neighborhoods. If this development were allowed to proceed at its proposed intensity, the social and physical composition of these neighborhoods would be substantially transformed within the next 10-15 years. This fragile and modest community, with its exemplary mix of income, racial and ethnic groups, will take on the homogeneous social and economic character of the gentrified neighborhoods surrounding Harvard Square.

People of modest means, and particularly the elderly, who are most vulnerable, will be pushed out, to be replaced by workers from this new development. As has happened in the Harvard Square area, singles, two- and three-family houses will be torn down to be replaced by town houses and garden apartment "complexes." Where lots are not large enough for this, buildings will be purchased by owner-occupants who will then be forced to rent apartments at market rates in order to carry the mortgages.

Cambridgeport and Area 4 are already under pressure due to the inflated real estate market in Cambridge and in the Boston region. The proposed development would very much accelerate and worsen this process of gentrification. This impact may already have begun, merely by the public announcement of the development. Once the full impact of this development on housing is realistically understood and predicted, it will be clear that a scaled-down plan, with an entirely different mix of uses, will be required to maintain the social and economic balance of this special community and to minimize displacement.

Cambridge's "Special Quality" Neighborhoods

Eighteen years ago, John Kenneth Galbraith, the Harvard economist, wrote feelingly of Cambridge:

"Cambridge is a city made up of many diverse groups which have achieved a high degree of social integration."

Focusing on Cambridge's neighborhoods, Galbraith continued:

"Within Cambridge, the neighborhoods in the vicinity of Brookline and Elm Streets, in particular, are made up of Black and white families of relatively low incomes living side by side harmoniously."1

Galbraith went on to emphasize the "special quality of these neighborhoods" by citing:

". . . the varied policies and actions taken by both the City of Cambridge and the Federal government . . . to preserve this area for its existing residents in spite of strong pressure from a tight housing market and other forces."²

Galbraith was speaking of four neighborhoods -- 3, 4, 5, and 7 -- which were threatened, in 1967, by the Inner Belt Interstate Highway.

Two out of these four neighborhoods are the same neighborhoods that, in 1986 and way into the future, will be impacted by Forest City's Mass. Ave./Sidney St. Development.

Growth and Development: General Deficiencies

It is obvious that those responsible for the preparation of the DEIR's section on growth and development had little or no knowledge of Cambridge's recent past.

No one reading the DEIR's growth and development section will learn anything about the "special quality" of Cambridge's two neighborhoods that will be severely and directly impacted by the Mass. Ave./Sidney St. development. The reason: the DEIR is silent on this "special quality."

And no one reading this section will learn anything about the years of effort made by the City of Cambridge and the individual neighborhoods themselves to make it possible for long-time residents to continue to live in their neighborhoods. The reason: the DEIR is silent on Cambridge's goal of preserving low-income neighborhoods for their residents.

More disturbing, the DEIR's section on growth and development virtually ignores its basic charge under the MEPA Scope: to investigate and analyze the range of impacts that the Mass. Ave./Sidney St. development will have on the people living and working in the residential and commercial neighborhoods adjacent to it.

Using obsolete 1980 statistics, and without any appreciable original field research, the DEIR's section on growth and development is little more than a superficial sketch of a limited number of this development's impacts on neighboring housing and commercial markets. In the past five years the area has experienced an extraordinarily rapid escalation of prices that far outpaces the increases recorded from 1970 to 1980. To cite just one example, a small two-bedroom house in upper Cambridgeport that sold in 1980 for \$40,000± was sold in mid-1985 for over \$150,000. Any area realtor can supply many other examples.

Both realtors and long-term residents are well aware that the area is experiencing tremendous pressure on its housing, especially its affordable housing. While the subsidized/public housing in Cambridgeport is exempt from this pressure, the only other protection comes from rent control. This is an imperfect tool, both because one-, two-, and three-unit houses can be removed from rent control if they are bought by an owner-occupant and because no one knows its political future. Rent control could be modified or eliminated at any time during the 15 years it will take Forest City to develop this project.

Predicted Effects of the Mass. Ave./Sidney St. Development

The report notes that Cambridgeport housing was originally developed in response to the rapid industrialization of the area in the late nineteenth century. The Mass. Ave./Sidney St. development will bring even more extensive commercial development into the area with far more employees than the industry formerly occupying these sites. This development will cause other commercial development on nearby vacant sites and in the Central Square area. During the proposed 15-year development period, this development and related commercial development will bring pressures on the local housing market that are at least as strong as those in the past.

The Mass. Ave./Sidney St. development proposes to accommodate 8,000 mostly new jobs over the next 15 years. The report assumes that only 20% of these 8,000 employees will seek to reside in Cambridge and that the impact of the 1,600 individuals and families seeking housing will be evenly distributed over the city. These are key assumptions to any impact analysis, yet no evidence can be presented to support them. No analysis is made of the effects of the very large "background" developments now underway at Alewife, Lechmere, Kendall, and Central Squares. Further, the Boston area's largest development site -- the Railroad Yards -- will be moving into the development process in a matter of years. A serious effort must be made to predict the extent of all these new market pressures on Cambridgeport.

Very little provision has been made to ameliorate pressures caused by the Mass. Ave./Sidney St. development. The DEIR says that the various alternatives will increase the housing stock in Cambridgeport by somewhere between 79 and 153 units. But it fails to mention that this housing is proposed to be built along Brookline Street where the project proponent does not own or otherwise control four large sites, comprising perhaps 20-30% of the area designated for housing in its plans. The project proponent cannot build the number of units of housing which it says it will without purchasing additional land or changing the proposed use of the site it purports to control.

The report says on Page IV-I-7 that the plan will "add substantially to the number of rental units in Cambridgeport." This is not true. Even if we assume that all of the added units are rental units -- which the DEIR doesn't claim -- it will still add only between 2.4% and 4.7% to the Cambridgeport housing stock (that is, between 79 and 153 units). The increase of 98 units in the Current Proposal is insignificant in comparison to the at least 1,600 employees who, according to the DEIR consultant's own projections, will be seeking housing in Cambridge.

Major Deficiencies in the EIR

1. Existing housing and social conditions in the neighborhood are either not documented at all or are misrepresented by exclusive reliance on out of date census results. What are the real existing conditions and trends?
2. There is no adequate justification for the claim that 20% of employees will seek housing in Cambridge. Why only 20%?
3. Very large "background" developments are already taking place or are planned for Alewife, Central Square, Lechmere and Kendall Square, yet the effects of these are ignored. Other future, yet inevitable, Boston area major developments will come on line within the time frame of the Mass. Ave./Sidney St. development. What will be the cumulative impact on Cambridgeport?
4. Despite the major problems of access to the site documented in the traffic impacts section, it is claimed that additional housing demands will be spread evenly throughout Cambridge. Why would this demand not be focused on Cambridgeport and Area 4, since as traffic gets worse more people will want to live within walking distance of their work? Additionally, how can project-created housing demands be spread evenly throughout the city when other areas of Cambridge are already absorbing similar impacts from major developments on their borders?
5. Because there is no significantly different alternative considered, the DEIR fails to answer the question of whether or not the plan could address the housing pressures it creates and still meet the proponent's other objectives. How many family housing units could be provided on this site?

Specific Deficiency: Impact on the Elderly

The DEIR's growth and development section says absolutely nothing about this development's potential impact on the elderly living in the adjacent neighborhoods. Clearly, questions abound:

1. How many elderly live in the neighborhoods to be impacted by University Park?
2. How many years have the elderly lived in these neighborhoods?
3. How many years have the elderly lived in their current residences?
4. How many elderly own their own homes?
5. How many elderly rent?
6. How many elderly require rental subsidies?
7. How many elderly live alone? In lodging houses? With relatives?
8. How many elderly want to remain living in their neighborhoods? In their residences?

Finding the answers to these and other critical questions about the elderly is not a difficult task. All it takes is a little routine legwork on the part of Forest City and its consultants.

Last winter, for instance, students at the University of Massachusetts' Gerontology Institute interviewed 103 of the estimated 400 residents who are over 70 years old living in the Cambridgeport (Area 5) and Riverside (Area 7) neighborhoods. They asked 66 questions. Some of the facts discovered -- none, of course, cited in the DEIR -- are:

1. The median number of years those over 70 years old have lived in either Cambridgeport or Riverside is 43.2 years.
2. The median number of years they have lived in their current residence is 29 years.
3. Of those interviewed, 62.7% are either single, widowed, divorced, or separated.
4. 92% want to stay in Cambridgeport or Riverside.
5. 40.6% live alone.
6. Of those living alone, 53.6% have an income of less than \$7,000, and 71.5% under \$10,000.

Without this type of data, the DEIR's section on growth and development cannot -- and does not -- analyze the Mass. Ave./Sidney St. development's impact on the elderly.

To make this analysis, the DEIR must ask a whole new set of questions. For instance:

1. Is either MIT or Forest City willing to have their develop-

- ment responsible for the displacement of an elderly widow who has lived in Cambridgeport or Riverside for 40 years?
2. Is either MIT or Forest City willing to have their development responsible for the displacement of an elderly family earning less than \$7,000?
 3. Will this development serve to help elderly residents remain in their neighborhoods? In their current residences?
 4. How many elderly housing units should this project provide?
 5. What should be the rental structure for the elderly housing units?
 6. How much subsidy will be required for the elderly housing units?
 7. Will this development's 8,000 employees displace long-time elderly residents?
 8. Will this development's 8,000 employees displace low- and moderate-income elderly residents?
 9. Since the DEIR claims rent control will serve to stabilize rents, will Forest City, in the DEIR, commit itself to the support of strong rent controls in the future as one way to reduce the impact of the Mass. Ave./Sidney St. development?

To sum up, the DEIR's section on growth and development is fatally flawed. It contains no original or current data on the elderly and their needs. And it makes no analysis of the Mass. Ave./Sidney St. development's impact -- good or bad -- on the elderly.

Additional Data Collection Required

1. Forest City consultants must get out of their offices and talk to those knowledgeable about housing market trends in the area. This includes at least six realty firms active in Cambridgeport. Would it be too much to ask that they also speak to long-term residents? An analysis of published sales prices and advertised (non-rent-controlled) rental prices would provide insight into the likely relationship between the very rapid escalation of the past two years and the public announcement of the Forest City development. This kind of price escalation has already happened in East Cambridge.
2. A study should be done on the proportion of office workers in other related Cambridge developments who presently reside or wish to reside in nearby Cambridge neighborhoods. How many of these would desire to be within walking distance of their offices? A questionnaire survey distributed to MIT, Kendall Square and Central Square office

workers, if properly designed, would help to illuminate this critical issue. As a secondary benefit, it would provide the developer with a reading on the latent housing market in the area.

3. An analysis should be made of who owns and who lives in the one, two- and three-family units in the area (54% of the total). These are the most vulnerable to redevelopment (when their lot coverage is fairly low) or to purchase by owner-occupants, thus taking them off rent control. What are the ages and typical income levels of those living in such units? How will the Mass. Ave./Sidney St. development market pressures affect them?
4. What percentages of those units in Cambridgeport presently under rent control are occupied by students, elderly or other low-income individuals and families? What protection will rent control, if continued, actually provide for longer-term residents of modest means? How many of the units now under rent control are in the vulnerable two- and three-family units?

Providing accurate answers to these and other key questions will take substantially more than looking at census data and talking to Cambridge Community Development Department staff. The potential for this project to cause major social and physical disruption justifies this effort. The ability to perform an adequate impact analysis depends, in part, on making the commitment to acquire this knowledge.

An Adequate Mass. Ave./Sidney St. Development Impact Analysis: Methodology

An adequate and satisfactory study of the probable impacts of the Mass. Ave./Sidney St. development will require a thorough comparative analysis that will take time and money. It should be possible to carry out the type of short-run analysis suggested here in a period of six to 12 months, depending upon how much of the necessary data base is already available and the amount of resources committed to a valid analysis.

Undoubtedly, MIT and Forest City will plead they have neither the time nor the money. But it should be remembered that MIT, in particular, and Forest City, later one, have had almost two decades in which to carry out a legitimate analysis. That MIT and Forest City did not take advantage of the time they had to produce a factually based impact analysis does not absolve them from the responsibility to do so. And, clearly, it does not prevent MEPA from demanding that it be done. The Final EIR should present an adequate impact analysis which includes the following steps:

1. A number of similar large-scale developments, not only in the Boston/Cambridge area but in other parts of the country, should be investigated. Both the major physical

and economic characteristics of the projects, as well as the characteristics of the residential and commercial markets and population in the surrounding areas, should be examined, identified, and quantified.

2. The residential and commercial markets in the neighborhoods adjacent to the projects investigated should be studied from the period before initiation of planning for the projects through construction, and -- if sufficient time has elapsed -- for at least five years following completion.

3. For a substantial number of local residential and commercial market areas not subjected to large-scale project impacts, the same set of parameters should be compiled over comparable time periods. This will provide a non-project comparative baseline.

4. It would be useful to examine areas that have experienced the impact of more than one major project, simultaneously or successively.

After development of a data base comprised of information produced through these four steps, it would be possible:

1. To separate project impacts from residential and commercial market changes not attributable to such projects; and
2. To identify the relationship between project characteristics as they affect the magnitude and type of impacts.

In the short run, it should be possible to construct a grid of project characteristics and impacts within which the Mass. Ave./Sidney St. development could be examined.

Ultimately, it would be desirable to construct a mathematical model using the techniques of factor analysis and multiple regression analysis, which could be used to predict project impacts.

Some Possible Mitigating Measures

After an adequate study of the growth and development impacts is completed, we believe that the following mitigating measures will be viewed in a different light than they have been up to now.

1. Decrease the density of office development, concentrating fewer employees in this one area of the city.
2. Increase the proportion of blue-collar (skilled, and semi-skilled non-professional -- not requiring a college degree, blue, white, and pink-collar) jobs, which are more likely to employ present residents of the neighbor-

hood. Although the more traditional factory jobs are now unlikely to locate in this area, a commitment could be made to a high proportion of jobs in start-up companies and of "development" jobs in research and development operations.

3. Increase the area allocated to housing. With sufficient area, 400-500 units could be provided at densities suitable for families. This should be examined as part of a genuine reduced-density alternative.
4. Commit to at least 50% of this housing to be provided at rents and purchase prices affordable to low- and moderate-income residents. This can likely be done if the developer and/or owner provides the land at low cost. If, after all other subsidy possibilities are exhausted, there is still a gap, the developer and/or owner should be required to close it with a cash contribution. This is an increasingly common requirement of large scale developments.

Conclusions

The Simplex Steering Committee is of the opinion that both the letter and the spirit of the Massachusetts Environmental Impact Act (MEPA) are violated by Forest City's DEIR because of deficiencies in Chapter IV, Section I -- Growth and Development. This section of the DEIR inadequately describes and inadequately analyzes the Mass. Ave./Sidney St. development's potential impacts on the people living and working in the residential and commercial neighborhoods adjacent to the proposed development.

It is the recommendation of the Simplex Steering Committee that MIT and Forest City be required to produce a completely new alternative plan which, while serving MIT's and Forest City's legitimate interests, will also serve to preserve and enhance the existing diversity and liveability -- the "special quality" -- of the neighborhoods adjacent to the Simplex Development Area.

Footnotes

¹Galbraith's words were unanimously endorsed by fifteen other MIT and Harvard professors, brought together by the Mayor of Cambridge to assess the threat of the Inner Belt on these neighborhoods. These scholars included: Robert Alberty, Dean of MIT's School of Science; Kevin Lynch, MIT Professor of City Planning; Louis Lyons, Curator of Harvard's Nieman Fellows; Charles Miller, Head, MIT's Department of Engineering; Daniel Patrick Moynihan, current U.S. Senator from New York; Lewis Mumford, world renowned urban scholar; Talcott Parsons, the Harvard sociologist; and James Vorenberg, Dean of the Harvard Law School.

2a. 1968 Model Cities Goal Statement (Neighborhoods 3 and 4):

". . . to prove that an integrated, low and moderate income neighborhood -- threatened by forces outside of itself -- is a valuable part of the city and deserves to be defended and strengthened."

b. 1971 Riverside/Cambridgeport Community Corporation Goal Statement (Neighborhoods 5 and 7):

". . . to provide long-term, low- and moderate-income neighborhood residents the opportunity to continue to live in their community in secure, sound, and affordable housing."

COMMENTS ON SECTION IV-J: WATER, SEWER AND DRAINAGE SERVICE

Water Service

According to the map on page IV-J-0 (Exhibit IV-J-4), approximately 5,600 feet of water lines will have to be replaced -- more than one mile -- to accommodate the Mass. Ave./Sidney St. development. (This does not include a new 16-inch line on Brookline Street, which is on the map but not included in the list of mitigation measures on page IV-J-16). This is a substantial impact. What is the cost? Since Forest City does not intend to pay for any of it, what is the likelihood that all this work will be done by the city of Cambridge? If the work isn't done, what will the impacts be?

Forest City distinguishes between replacement of the water lines, which is "required" for the project to go forward, and water-saving measures, which "may" be taken. Forest City should commit to specific measures it will take to reduce demand for water by a specified amount. Other measures besides the three listed on page IV-J-16 should be examined. The water supply for eastern Massachusetts is limited; water emergencies have been declared in dry years. Furthermore, any reduction in water use will also reduce the amount of sewage generated by the project.

Sewer Service

The sewerage study does not take into account the impact of other new development besides the Mass. Ave./Sidney St. development on the project area collection system. Furthermore, the report's conclusion that existing sewer lines will be adequate is conditioned on the city's rehabilitating and maintaining the system. What is the cost of this? What assurances does Forest City have that the city of Cambridge will carry it out? If it isn't done, what will the impacts be?

As mentioned before, Forest City hasn't given a firm commitment to any improvements that aren't the responsibility of the city. The developer must promise to reduce inflow and infiltration by a specified amount, since the project will result in more sewage and more overflows of untreated sewage into the Charles River without such reductions. Forest City must also make specific commitments to improve the separation of storm drains and sanitary sewers.

Drainage Service

The project will increase the runoff factor (C factor) by 41%. Existing storm drains are not adequate to handle

this without flooding. A nine-inch flood is not "minimally disruptive," as Forest City asserts. Forest City must describe the impacts and the duration of such a flood.

Again, Forest City wishes to obtain the benefits of improvements that it is not willing to finance. What is the cost of the improvements to the storm drainage system? What assurances are there that the city will pay? If the improvements are not made, what will the effects be?

The analysis of the storm system assumes that a backup at Brookline Street would be diverted down Bishop Allen Drive, increasing the Bishop Allen Drive flow by 20cfs. What impacts will this have on the existing flooding problems in the School/Pine/Cherry Street area? Is this consistent with current city plans to divert storm system backup from Bishop Allen Drive to Cambridgeport?

COMMENTS ON SOLID WASTE (not addressed by the DEIR)

1. There is a severe shortage of garbage disposal capacity in eastern Massachusetts. Specifically, the city of Cambridge is facing the loss of its disposal site within a few years (the BFI transfer station on the Somerville line). All three alternatives proposed by Forest City will generate substantial amounts of solid waste. Forest City must estimate the quantity for each alternative, and also estimate how much of the waste will be collected by the city as residential rubbish and waste from small businesses, and how much must be disposed of by the generator using private contractors. The proponent must also explain how this additional waste will be accommodated, given the severe disposal capacity crisis. Finally, Forest City should commit to specific measures to reduce the quantity of solid waste from the project, i.e., recycling, re-use or disposal on-site, among others.

2. The city Department of Public Works (DPW) now uses part of a building on Sidney Street between Franklin and Pacific Streets for truck storage and a lot in front of the building for storing other items. The project will eliminate this. Where will the DPW relocate and what will be the cost to the city?

COMMENTS ON SECTION IV-K: HAZARDOUS MATERIALS

The site survey raises serious concerns that major chemical contamination of the soil in the planned development area has occurred. There is no assurance that any mitigating procedures will be adhered to.

1. The DEIR does not indicate how thorough the "walkover" survey was. Was every site examined? Was every existing building entered and walked through? At how many locations was it impossible to visually examine ground-level soil conditions, due to relatively recent dumping of fill and/or debris? In studying site histories, the developers assume -- without questioning -- that useage of chemicals by companies formerly located on the development site is completely reflected by any city permits issued to those companies. This is an unjustified assumption. Even the site survey that was performed indicates the possibility of major contamination by many unknown, unidentified chemicals, at many locations. In addition, over a 75-year period at the old Simplex Wire and Cable Company site -- consisting of more than 50% of the proposed development area -- the manufacturing wastes and effluents are completely unknown.
2. No soil sampling has been done to best the possibility contamination by highly toxic or carcinogenic substances. Contamination by PCB's is likely given the history of the site. The developers say that they will conduct soil tests before construction. However, the number, depth and criteria for locating test borings are not indicated nor are the analytic methods specified that will be employed. There is no provision for enforcement to guarantee that an adequate survey will be conducted and no provision for community review after the findings are available.
3. There does not appear to be a provision for soil testing in the public areas such as the Common, Auburn Park, or the Totlot. This would be important since these areas will be used by children for play in unpredictable ways that could expose these children to toxic materials.
4. The developers provide several mitigating procedures to be employed in the event of serious soil contamination, but no provision is offered to guarantee their use or enforcement. Also, the procedures are too vague to ensure protection.
5. The developer should estimate the amount and type(s) of hazardous wastes that will be generated by commercial, R & D and other tenants. The developer should specify how these wastes will be transported for disposal, including estimates of the numbers of shipments and the routes.

COMMENTS ON SECTION IV-L: CONSTRUCTION

The Scope directs the proponent to specifically address the following five construction issues:

- 1) Identify the construction impacts related to each development phase,
- 2) Describe construction strategies, including (but not restricted to) routing and scheduling measures which will reduce traffic impacts during construction,
- 3) Consider noise control measures,
- 4) Consider dust control measures,
- 5) Discuss the potential for rehabilitation, rather than demolition, of structures existing on the project site.

Not one of these issues is studied seriously in the DEIR. Some are completely ignored.

1. Construction impacts are not identified. Development phasing is hardly identified. Only Phase I construction activities are depicted, and these account for less than 20% of the total construction planned for the site. Since the proponent does not indicate any time frames for the various construction phases, it is extremely difficult to assess their impacts. The DEIR makes superficial, qualitative generalities about demolition and construction impacts that would be applicable to any small construction project in Cambridge. Therefore, construction impacts are drastically underestimated and, in some cases, important impacts are ignored.

2. A scheduling proposal to reduce traffic impacts during construction is not presented by the proponent. Routing proposals for truck traffic are vague. No estimates are presented for total numbers of truck trips associated with demolition and construction activities for any phase. Since neither the duration of construction nor assessment of total truck traffic per phase has been presented, no estimate of aggregate daily truck traffic to and from the site could be made. And, since there are absolutely no construction traffic load estimates, there are, of course, no load estimates for each of the vaguely described truck routes.

The DEIR claims that traffic generated by construction workers travelling to and from the site will probably not be a problem. In doing so, it avoids making any claims about problems created by truck traffic to and from the site. The DEIR makes the claim that the proposed truck

routes avoid residential areas. In fact, the proposed routes makes travel through residential areas unavoidable. The residential area on Green Street between Landsdowne and Magazine Street (which includes a 300-unit elderly housing development) is but one example.

3. Quantitative assessment of noise levels generated from demolition and construction activities are not presented. Since no duration for construction plans was presented, there is no information about how long the abutters to the site will need to endure demolition and construction noise. There is no presentation of specifically what noise levels the proponent would view as excessive. No quantitative estimates of vibration and noise impacts from pile driving activities is presented. In fact, there is no information at all on how many piles must be driven into the site.

Instead, the DEIR claims that noise impacts from demolition "are expected to be minimal," and that unavoidable noise associated with construction traffic will be mitigated by a vague truck routing plan.

4. There is no information on the methodology used to draw quantitative conclusions about the fugitive dust emissions during construction. Reference is made to models from two EPA Guideline documents, but nothing appears in the construction or air quality sections, or in the appendices, to explain how, or even if, these models were in fact used. Certain quantitative assumptions are presented without justification. How, for instance, can only .17 tons of suspended dust emissions monthly per construction acre be assumed by the proponent, when EPA typically estimates a value nine times as large (1.5 tons/month/acre). Estimates are made for fugitive dust impacts on one residential area abutting the site. Residences in areas which are probably more sensitive, such as those to the north of the site, are ignored.

No removal plans are presented for asbestos uncovered during site excavation operations. This is a major source of fugitive airborne asbestos particulates during construction since it is usually encountered unexpectedly. Unless regulatory personnel are present, the problem is usually ignored. It is loaded (dry, broken, and powdered), with the excavate and hauled conventionally from the site on the usual truck routes. People familiar with the history of this area claim that there are extensive, abandoned, asbestos-covered steam pipes underground which once distributed live steam from the CELCO plant in Kendall Square.

The DEIR claims that the daily watering of exposed soil will mitigate impact from the "Simplex Dust Bowl" during construction. The DEIR says that solid fencing might be used to slow down the dust storm. The DEIR notes that "as soon as possible in the construction process" exposed areas will be seeded, covered or paved. Yet nothing has been stated

about the construction process timetable, except that it may take 15 years.

5. The DEIR presents absolutely no discussion of the potential to rehabilitate existing structures. This directive of the Scope is entirely ignored. Secretary Hoyte's response to the proponent's request for a limited waiver for the KLH renovation concludes with a restatement of this directive:

"I am mindful of the Simplex Steering Committee's concern that buildings which could provide low-cost space for manufacturing operations should be preserved if possible. However, other structures in the project area are more worthy of preservation for these purposes. . . . Preservation of more deserving structures should be carefully evaluated."

This, too, was ignored by the proponent.

Although the proponent concedes there are still a few historic structures standing east of Sidney Street (the housing on the eastside of Blanche Street, 38 Green Street, and the buildings now occupied by Charles River Publishing and Good News Garage are specifically noted in Appendix G) there is no discussion of even their potential for rehabilitation or preservation. Further, there is no explanation of why other structures on the site are considered historic.

Why has the Fenton Shoe Building been excluded from consideration for preservation? The structure has obvious potential for rehabilitation. Obvious mitigation of construction impacts would result from rehabilitation rather than demolition of such a sizeable building. This is especially true since this is the only corner of the site bounded on two sides by existing uses including more than 30 units of housing. This handsome industrial building has clear historical significance (1875 Kennedy Cracker Company, 1894 New York Biscuit Company, 1903 Nabisco). If the proponent had presented a comparison of reconstruction versus rehabilitation costs for this building it would be clear that its preservation is in the interest of the proponent and all parties.

The parking section of the Scope questioned the use of the Fenton Shoe Building site for a parking structure:

"The Forest City proposal apparently locates several parking structures near Brookline Street. What is the need for this siting? Is it detrimental to the residential character all parties are trying to preserve?"

These questions were unanswered by the DEIR.

The ENF and reduced density alternative plans call for considerably more demolition than the current proposal. Yet no mention is made of preservation and rehabilitation

potentials of these buildings, including some less than 20 years old.

Instead of considering potentials for building preservation, the Current Proposal demolishes every structure on its site.

12.

S-364

Comm. from the Simplex Steering Committee,
transmitting their response to the Mass. Ave./
Sidney St. Development Draft Environmental
Impact Report No. 5487 of Forest City/M.I.T.
dated May 9, 1986.

In City Council,

May 19, 1986

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