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JULY 17, 1996
MEMORANDUM OF AGREEMENT BETWEEN
THE COMMONWEALTH OF MASSACHUSETTS AND
THE CITY OF CAMBRIDGE

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CAMBRIDGE MA.

WHEREAS, it is the position of the Commonwealth of Massachusetts (the "Commonwealth") that the commercial parking freeze imposed on Cambridge pursuant to 40 C.F.R. §§ 52.1128(b), 52.1135 (the "Cambridge Parking Freeze") is a part of the Massachusetts State Implementation Plan ("SIP"); and

WHEREAS, between 1990 and 1992, the City of Cambridge (the "City") and the Commonwealth through its Department of Environmental Protection ("DEP") agreed to work together to amend the SIP under the Federal Clean Air Act, 42 U.S.C. § 7401, et seq., to rescind the Cambridge Parking Freeze and replace it with a flexible program of transportation control measures designed to reduce vehicle trips in the City (the "Vehicle Trip Reduction Program" or "VTRP"); and

WHEREAS, since 1990, the City has regularly consulted with the Commonwealth about development of the VTRP; and

WHEREAS, the City engaged Cambridge Systematics, Inc. ("CSI") to analyze the reduction in vehicle miles travelled ("VMT") and pollutant emissions associated with various elements of the VTRP and to compare the impact of the VTRP on VMT and air quality with the impacts of several types of parking freezes on air quality utilizing conservative assumptions; and

WHEREAS, CSI concluded that the VTRP would generate more VMT reductions and be better for air quality than the Cambridge Parking Freeze; and

WHEREAS, in 1992, the City submitted to the Commonwealth the CSI analyses and impact projections together with a detailed description of the City's VTRP and a petition to promulgate a rule to rescind and replace the Cambridge Parking Freeze; and

WHEREAS, since 1992, the City has been implementing, refining, and expanding its VTRP; and

WHEREAS, the City's VTRP targets and is achieving reductions in VMT and air emissions generated by both commuter and non-commuter vehicle trips; and

WHEREAS, the City and the Commonwealth have worked together to develop a monitoring and demonstration plan for the City to use to confirm CSI's projections about VMT reductions achievable by the VTRP, to document some of the VMT reductions achieved by the City between 1992 and 1996, and to monitor additional VMT reductions to be achieved by the City in connection with a rule to rescind and replace the Cambridge Parking Freeze (the "Monitoring Plan"); and

WHEREAS, the City and the Commonwealth have consulted the U.S. Environmental Protection Agency ("EPA") and will continue to consult EPA concerning the rule to rescind and replace the Cambridge Parking Freeze; and

WHEREAS, the Commonwealth agrees to proceed expeditiously to promulgate a rule requesting EPA to approve rescission and replacement of the Cambridge Parking Freeze; and

WHEREAS, the City agrees to implement the Monitoring Plan and expeditiously collect and submit the information and data required therein to EPA and the Commonwealth;

NOW THEREFORE, the City and the Commonwealth agree to take the following actions on the following schedule:

1. No later than July 22, 1996, the City and the Commonwealth shall submit an agreed-on draft of the Monitoring Plan to EPA.

2. The City and the Commonwealth agree to work together to draft a rule to rescind the Cambridge Parking Freeze and replace it with a commitment that the City implement a VTRP designed to offset VMT associated with the addition of new commercial parking spaces in the City (the "Rule"). No later than September 13, 1996, the Commonwealth and the City shall submit to EPA an agreed-on draft of the Rule.

For purposes of the Rule, a commercial parking space shall mean a parking space available for use by the general public at any time for a fee and shall not include parking spaces which are owned or operated by a commercial entity whose primary business is other than the operation of parking facilities, for the exclusive use of its lessees, employees, patrons, customers, clients, patients, guests or residents and not available for use by the general public. [This definition is taken from Section C.4 of the City of Boston Procedures and Criteria for Issuance of Parking Freeze Permits and South Terminal Corp v. EPA, 502 F.2d 646, 671-672 (1st Cir. 1974).]

3. No later than October 30, 1996, the City and the Commonwealth shall consult with EPA about the proposed Monitoring Plan and Rule and the monitoring data submitted by the City pursuant to paragraph 6, below.

4. No later than December 4, 1996, the Commonwealth shall

publish notice of the rulemaking and schedule a public hearing on the proposed Rule. The hearing shall be scheduled for the earliest possible date thereafter and no later than January 4, 1997.

5. The Commonwealth shall promptly complete its rulemaking process and submit the final Rule to EPA requesting approval to rescind and replace the Cambridge Parking Freeze no later than February 28, 1997.

6. No later than September 30, 1996, the City shall submit to the Commonwealth and EPA the documentation and demonstrations about the City's VTRP and its impacts on VMT as specified in paragraphs 1 through 8 of the Monitoring Plan (i.e., the pre-rulemaking component of the Monitoring Plan). Other data and information required to be collected by the City pursuant to the Monitoring Plan shall be submitted by the City to EPA and the Commonwealth within four months of the date EPA issues its determination that the state's request for a SIP revision (i.e., the Rule) is complete pursuant to Section 110(k) of the Clean Air Act, 42 U.S.C. § 7410(k), or such other time as EPA, the Commonwealth, and the City agree is appropriate to facilitate completion of the rulemaking process. The City will be responsible for meeting the requirements of Section 193 of the Clean Air Act, 42 U.S.C. § 7515.

7. Effective immediately, this Memorandum of Agreement shall supersede the Memorandum of Agreement between the Massachusetts Department of Environmental Protection and the City of Cambridge dated August 10, 1990 and the Amended Memorandum of Agreement dated June 19, 1992.

8. Until EPA issues its approval to rescind and replace the Cambridge Parking Freeze, the City shall not issue any new parking permits for construction or operation of additional commercial parking spaces (as defined in paragraph 2, above) unless the permits are issued to replace commercial parking spaces that have been permanently taken out of service as commercial parking spaces (e.g. converted to residential parking or physically eliminated from the parking supply) after the date of this Memorandum of Agreement. Prior to issuing such replacement permits, the City shall notify and consult with DEP and EPA. The City may issue permits for non-commercial parking spaces.

9. Notwithstanding anything in paragraph 8 to the contrary, the City may authorize up to eighty-one (81) new commercial parking spaces, which is the number of spaces remaining in the interim parking freeze bank.

10. The City will continue to work with the Commonwealth to explore additional ways to manage travel demand and demand for parking in the City and ways in which it can facilitate the transfer of parking space permits and/or parking spaces within the City. The City will also examine its Zoning Ordinance to determine whether reduction of the minimum and/or maximum parking space ratios would achieve additional vehicle trip reductions within the City and will report back to the Commonwealth concerning this determination within two (2) years.

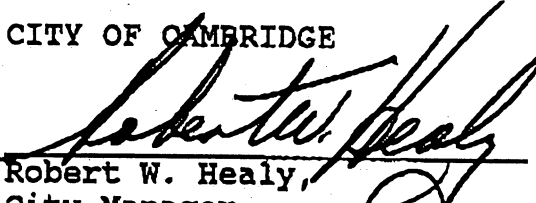
11. The City will periodically inspect all non-residential parking facilities to ensure that they are operating pursuant to appropriate permits and approvals and that non-commercial spaces are

being used solely for non-commercial purposes and are not available as commercial spaces for use by the general public for a fee. The City will take enforcement action against violators to ensure that each such facility has a valid permit or approval to operate and that each such facility is in compliance with the terms and conditions of such permit or approval. The type of enforcement action the City may undertake may include, but need not be limited to, imposing fines, revoking permits or approvals for those spaces operating in violation of their permits or approvals, and/or eliminating those spaces or facilities found to be operating with no approval.

The terms of this Memorandum of Agreement become effective upon signing by the parties. This Memorandum of Agreement is intended to be binding on the Commonwealth.

CITY OF CAMBRIDGE

By:

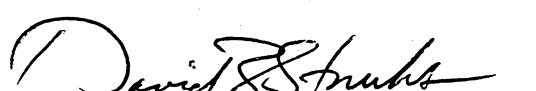

Robert W. Healy,
City Manager

Date:

7/17/96

DEPARTMENT OF ENVIRONMENTAL
PROTECTION

By:


David B. Struhs,
Commissioner

Date:

7/17/96

MONITORING PLAN

Paragraphs 1 through 8 comprise the pre-rulemaking demonstration about the City's VTRP and some of the VMT reductions achieved by the City between 1992 and 1996. This information will be submitted by the City to the Commonwealth and EPA pursuant to paragraph 6 of the foregoing Memorandum of Agreement dated July 17, 1996. The remainder of the Monitoring Plan will be implemented by Cambridge for up to two years so long as DEP and EPA are processing a rule to rescind and replace 40 C.F.R. §§ 52.1128(b) and 52.1135, the commercial parking freeze in Cambridge.

1. Describe the staffing, tasks, and budget for the personnel and departments assigned between 1992 and 1996 to implement the City's vehicle trip reduction program.
2. Identify the locations and number of on-street parking spaces which the City (between 1992 and 1996) has restricted by obstructing/prohibiting all use, converting to residential use, or imposing time-use constraints to preclude/discourage commuter use.

(Note: any such spaces that were redistributed through the interim parking freeze bank will not be included in this listing.)

3. Identify development projects that received permission from the City between 1992 and 1996 to operate fewer non-residential parking spaces than were allowed by the maximum parking ratios under the Cambridge Zoning Ordinance and calculate the VMT reductions achieved by reference to the numeric value of 15.2 (hereafter called the "VMT Value"). Credit will not be requested for more than the VMT value of 475 such parking spaces.
4. Calculate impacts of the municipal employee vehicle trip reduction program from 1992 to 1996, including:
 - Estimated VMT reductions achieved by municipal employees using City-subsidized transit passes;
 - Estimated VMT reductions achieved by employee use of municipal shuttle services in lieu of driving;
 - Estimated VMT reductions achieved by employee use of City-supplied bicycles in lieu of driving;
 - Estimated VMT reductions achieved by required bicycle and foot patrols for Cambridge police in lieu of driving; and
 - Compare with CSI's predicted VMT reductions.

5. Identify development projects between 1992 and 1996 for which the City has required aggressive parking and transportation demand management programs (i.e., municipal projects and issuance of special permits for private development projects) and other City efforts between 1992 and 1996 to encourage and facilitate employers to promote private employee vehicle trip reductions, including for example:
 - Estimated vehicle trip and/or VMT reductions associated with ridesharing by employees;
 - Estimated vehicle trip and/or VMT reductions associated with employee use of transit passes purchased through payroll deduction;
 - Estimated vehicle trip and/or VMT reductions associated with use of employee shuttles;
 - Number of bicycle, carpool/vanpool/ZEV parking spaces;
 - Other special permit transportation demand management requirements; and
 - Compare with CSI's predicted VMT reductions.
6. Describe the impact of the bicycle and pedestrian mobility improvements that have been implemented by the City between 1992 and 1996, including:
 - Linear feet of exclusive bicycle lanes and guidelines;
 - Number of bicycle parking facilities;
 - Number of City-owned bicycles available for use by municipal employees;
 - Number of pedestrian crosswalk and sidewalk improvements;
 - Number of traffic signage and/or signal improvement locations;
 - Linear feet of crosswalk crossing distances reduced (by curb extensions, travel lane reductions, addition of islands);

- Programs for maintenance of infrastructure improvements; and
 - Compare with CSI's predicted VMT reductions.
7. Describe restrictions imposed and enforced by the City on use of official visitor parking passes and resident visitor parking passes.
 8. Describe City efforts to increase the use and accessibility of public transit:
 - Documentation of City efforts to improve routing of buses to reduce number of connections and changes;
 - Number of bicycle parking facilities at or near subway and bus transit nodes;
 - Number of locations and volume of distribution of T routes and schedule information; and
 - Improved multi-modal linkages between T-stations and bike and pedestrian facilities.
 9. Identify off-street parking spaces and that have been eliminated, converted to residential use, or restricted to preclude commuter use since 1992 and calculate the VMT reductions achieved by reference to the VMT value.
 10. Identify on-street parking spaces that have been eliminated, converted to residential use, or restricted to preclude commuter use since 1996 and calculate the VMT reductions achieved by reference to the VMT Value.
 11. Identify development projects that have received permission since 1996 to operate fewer non-residential parking spaces than would be allowed by the maximum parking ratio in the Cambridge Zoning Ordinance and calculate the VMT reductions achieved by reference to the VMT value.
 12. Identify fleets in the City that have been converted since 1996 to clean fuels or replaced by zero emission vehicles and calculate the VOC, CO, and NOx reductions associated therewith by a pre-determined formula.
 13. By reference to logs maintained by City departments, calculate the VMT reductions associated with use of bicycles and T-tokens by City employees in lieu of cars for the conduct of City business since 1996.

14. Identify the ridership of paratransit and high occupancy vehicles ("HOV") for non-commute trips since 1996 and convert ridership numbers to VMT reductions by reference to the average trip length number utilized by the Massachusetts Central Transportation Planning Staff ("CTPS") in its calculations concerning intra-city trips.
15. Test (and credit the City for) CSI's projections for VMT reductions attributable to an increase in the number of Cambridge residents working within the City of Cambridge by confirming the increase in local employment since 1992.
16. Test (and credit the City for) CSI's projections for VMT reductions achieved by the municipal employee trip reduction program (which includes subsidized T-passes as one element) by confirming the VMT reductions achieved since 1996 by municipal employees using City-subsidized transit passes.
17. Test (and credit the City for) CSI's projections for VMT reductions achieved by the City's enhanced commuter mobility program since 1996 (i.e., outreach by the City's Environmental Program staff to private employers to encourage and facilitate private employee vehicle trip reductions) by converting the following data to VMT reductions by reference to the CTPS average journey-to-work trip length utilized by CSI in its projections:
 - a. Ridership of privately-operated shuttles and vans;
 - b. Numbers of employees purchasing T-passes through private employer;
 - c. Numbers of private employee parking spaces that have been restricted to use by carpool (or other HOV use), low emission vehicles, or zero emission vehicles.
18. Confirm that municipal parking fees have been raised to the extent specified by CSI in order to achieve (and credit the City for) the VMT reductions predicted by CSI.
19. Using the Highway Capacity Manual, calculate the future VMT reductions associated with the elimination of a vehicle travel lane in Central Square on Massachusetts Avenue.

Note: Any off-street or on-street parking space that was transferred to the interim parking freeze bank will not be included in the calculation of VMT reductions under this monitoring plan.

Derivation of the VMT Value

The VMT value of a new commuter parking space in Cambridge is at most 15.2. The basis for this value is described in the attached memorandum prepared by CSI (April 30, 1996). Note that when CSI developed its projections about the impact of the City's vehicle trip reduction programs, DEP asked the City to focus its limited resources on commuter trips and impacts. Accordingly, CSI's projections relied heavily on journey-to-work trip data and mode split information generated by the Massachusetts Central Transportation Planning Staff (CTPS). CSI did not attempt to quantify the significant (but expensive to analyze) non-commuter impacts of the City's programs. Absent the expenditure of significant additional funds for data collection and analysis, we will need to use the VMT value of a commuter parking space as a surrogate for the value of any non-residential parking space, including a commercial parking space. Note, however, that all of CSI's analyses are conservative in that they analyze the VMT impact of an across-the-board, absolute ban on new parking spaces in the City, which is a much broader form of parking freeze than the commercial parking freeze set forth at 40 C.F.R. §§52.1128(b), 52.1135.

Memorandum
Cambridge Systematics, Inc.

TO: Wendy Jacobs (Foley, Hoag & Eliot)
FROM: Sam Lawton
DATE: April 30, 1996
RE: VMT Associated with Commuter Parking in City of Cambridge

At your request, I have reviewed the Technical Appendix (September, 1992) prepared by Cambridge Systematics in support of the Cambridge Proposed SIP Amendment for the purpose of deriving a figure for estimated vehicle miles of travel (VMT) generated by new commuter parking spaces. Section 4 of the Technical Appendix provides analyses of alternative future parking conditions in the City of Cambridge which include baseline conditions, various parking freeze conditions, and some components of the Cambridge Vehicle Trip Reduction Program. These analyses were based on available journey-to-work mode share data and trip generation rates applied to a pivot point model used initially to test the effectiveness of some trip reduction strategies included in the City's proposed SIP Amendment. This section contains an analysis of the effect of an absolute parking freeze prohibiting issuance of any new non-residential parking space permits. Data from this analysis was used to estimate the VMT which would be generated as a result of parking spaces which might be added to Cambridge's parking supply.

The analysis of an absolute parking freeze in Section 4 is calculated for hypothetical parking demand which would be generated if an additional 8 million square feet of new development were authorized allowing approximately 2 new parking spaces for each 1000 square feet of development. New development would include office, retail, research and light industrial uses based on forecasts prepared by the Cambridge Community Development Department. Assumed travel conditions for the analysis would not change substantially from baseline conditions in terms of trip generation rates, although, as a result of a higher number of new employees who would originate outside of Cambridge and other inner metropolitan core communities, mode shares would change slightly.

Table 3 in Section 4 provides the calculations for the effect of an absolute parking freeze with 8 million square feet of development. Using parking supply factors consistent with 1990 conditions, an estimated 16,029 new spaces would be required to meet the parking demand generated by this hypothetical new development. Without any controls in place which would substantially change travel behavior, the employment generated by this new development would produce an additional 250,432 vehicle miles of travel. Using these two data points alone, each new parking space would have a net VMT value of 15.6. However, the fact that the City has been implementing a variety of trip reduction programs since 1992 must also be factored into the calculation. These programs were designed to create and enhance paratransit opportunities, improve access to public transit, and facilitate mode shifts away from single-occupancy vehicles. The effect of the City's now-established vehicle trip reduction programs is to further reduce the rate of VMT generation, resulting in a calculated VMT value for each new parking space of 15.2 vehicle miles of travel. (Note that this factor does not account for any offset/reduction in regional VMT resulting from the reallocation of employment from municipalities with no parking restrictions to the City of Cambridge.)

Memorandum of Agreement
between the Commonwealth
of Massachusetts and the
City of Cambridge.

S-375.

In City Council July 22, 1996