

COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

OFFICE OF APPEALS AND DISPUTE RESOLUTION

May 28, 2009

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In the Matter of  
Coalition to Preserve  
the Belmont Uplands

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Docket No. 2008-069  
DEP File No. JD07-2094  
Belmont/Cambridge

**RECOMMENDED FINAL DECISION**

On March 20, 2008, the Office of Appeals and Dispute Resolution (“OADR”) of the Massachusetts Department of Environmental Protection (“MassDEP” or “the Department”) received this appeal regarding certain property in Belmont and Cambridge referred to as the Belmont Uplands (the “Property”). The Property is located near the Little Pond in Belmont and the terminus of Route 2 where there is an off-ramp into the Alewife MBTA Station. The Coalition to Preserve the Belmont Uplands (the “Petitioner”) had requested a Determination of Applicability from the Department relative to jurisdiction under M.G.L. c. 91 and 310 CMR 9.00 (the “Waterways Regulations”) on the Property. The Petitioner filed this appeal to challenge the issuance of the Department’s Negative Determination of Applicability (“NDA”). The Petitioner claims that the filled, former course of a tidal river, the Little River, is present on the Property and constitutes Tidelands within the meaning of 310 CMR 9.00. The owners of the property, AP Cambridge Partners II, LLC, (“Property Owner”) intervened. The Property Owner intends to construct a multi-unit residential development on the Property.

An Adjudicatory Hearing (“Hearing”) was held on February 25, 2009, and the following issues were addressed at the Hearing through the filing of prefiled direct testimony and cross examination of witnesses:

1. Whether Petitioner has standing to request an adjudicatory hearing under the terms of M.G.L. c. 91, § 18 and 310 CMR 9.17?
2. Whether the Department erred in its determination under 310 CMR 9.04 that there was no jurisdiction over the former course of the Little River on the Property that was the subject of the Petitioner’s Request for Determination of Applicability?
3. If the Department did err, whether a finding of jurisdiction over the Property would require the [Property Owner] to apply for a license pursuant to 310 CMR 9.05?
4. Whether the former course of the Little River is “landlocked tidelands” as defined in 310 CMR 9.02?

For the reasons set forth in detail herein, I recommend that the Department’s Commissioner issue a Final Decision in favor of the Petitioner on Issue No. 1, standing, but I recommend that a Final Decision enter in favor of the Department and the Property Owner on Issue No. 2, jurisdiction. Because I recommend that a decision enter in favor of the Department and the Property Owner on Issue No. 2, it is not necessary to reach Issues Nos. 3 and 4.

**I. Summary of Petitioner’s Claims and Summary of Undisputed Facts**

The Petitioner claims that the original course of the Little River was located on a portion of the Property and is a “Tideland” subject to Commonwealth jurisdiction in its natural state under the applicable definitions in M.G.L. c. 91 and 310 CMR 9.00. Petitioner also claims that there is a portion of the Property Owner’s proposed development of the Property, namely, some underground utility lines, which will have to be constructed in fill of the alleged Tideland. In sum, the Petitioner contends that the Department erred in making its Negative Determination of Applicability. Petitioner also claims that the portion of the Little River on the Property qualifies as Landlocked Tidelands under the Waterways Regulations.

Many facts in this matter were undisputed, and most of the undisputed evidence is drawn from the Report on Improvement of the Upper Mystic River and Alewife Brook by means of Tides Gates and Large Drainage Channels by John R. Freeman dated September 21, 1904 (the “Freeman Report”), Exhibit 5, and a survey of all of the waterways, including the Little River, in the river system flowing into Boston Harbor through the Mystic River, namely, the Contour Map of a Portion of Mystic River Basin, Cradock Bridge to Lower Mystic Lake including the Alewife Brook Marshes and Spy Pond, Medford, Somerville, Cambridge, Arlington & Belmont, dated July 1904, performed by William Pierce as a part of Mr. Freeman’s work (the “Pierce Plan”), Exhibit 5 and Blowups A, B and C (enlargements of the Pierce Plan). All expert witnesses in this matter agreed that the best information about the Little River and the tidal aspects of the river system into which the Little River flows is derived from the Freeman Report and the Pierce Plan. See Prefiled Direct Testimony of Dr. Stephen Kaiser (“Kaiser Direct”), ¶ 19 (“It is my opinion that the best quality source document is the 1904 Freeman Report and associated mapping, including its description of flow conditions and measurements of tidal conditions relative to harbor tides in related charts.”); Pre-Filed Rebuttal Testimony of Stephen H. Kaiser (“Kaiser Rebuttal”), ¶ 4; Pre-Filed Direct Testimony of Robert F. Daylor, P.E. (“Daylor Direct”), pp. 5 & 8; Pre-Filed Direct Testimony of W. Sterling Wall (“Wall Direct”), pp. 8-9; Pre-Filed Direct Testimony of Alex Stryisky (“Stryisky Direct”), ¶ 12.<sup>1</sup>

The purpose of the Freeman Report study was to gain a detailed understanding of the hydraulics of the entire river system both from freshwater flooding and tidal influence in order to design a civil engineering project to alter these waterways in such a way as to increase the

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<sup>1</sup> I concluded that all expert witnesses were competent to testify to the matters at issue. Some witnesses, such as Mr. Daylor, had additional expertise, such as his expertise as a professional land surveyor. Where additional special expertise is relevant to the weight given to an expert’s opinion, this is noted in this Recommended Final Decision (“RFD”).

velocity of drainage of the upper reaches of the system and to prevent tidal flows from intruding too far into the system. This study was motivated by serious flooding and health issues, including proliferation of malarial mosquitoes in stagnant marsh pools. The marsh pools were caused by inadequate drainage from the upper reaches of the river system that surrounded the Little River and upper portions of the Alewife Brook. The upstream flooding was impeded by tidal influences in lower portions of the river system. Therefore, Mr. Freeman conducted a highly detailed investigation and survey of the entire river system, including the Little River, to determine the volumes of freshwater flows and the tidal elevations in both average and extreme conditions. *See Freeman Report, Ex. 5, pp. 1-2.*

The location of the Property near the border of Cambridge and Belmont is undisputed and is reflected on a plan submitted by the Property Owner. *See Wall Direct, Figure VI-1 (showing Property and proposed development in relation to the historic course of the Little River on the Pierce Plan).* It is also undisputed that the current course of the Little River, which flows out of Little Pond, is not the original location. At the present time, the Little River flows out of Little Pond in Belmont at a short distance from the southwesterly border of the Property. Little River then crosses the Belmont-Cambridge town line and flows into Wellington Brook. *See Aerial Map of Relocated Little River and Alewife Brook, Ex. 30.* From there, Wellington Brook flows into Alewife Brook. *Id.* The Alewife Brook flows under the Massachusetts Avenue Bridge and the Broadway Bridge and thence into the Mystic River. *Id.* The Mystic River is currently dammed at the Amelia Earhart Dam in Medford. *Id.* This dam bars tidal flow upstream. *Id.*

However, there is a dispute about where the original course of the Little River was located and whether any of that original course was on the Property. In the Pierce Plan, the Little River is mapped as flowing out of the eastern side of Little Pond and into Alewife Brook at

approximately the location of the former Lexington & Arlington Branch Railroad Bridge (“Lexington Branch Railroad Bridge”). See Pierce Plan, Ex. 5 and Blowup C at black pin. The Petitioner alleges that the Pierce Plan location represents the historic course of the Little River. An overlay map shows the location of the historic course of the Little River as alleged by the Petitioner over the planned areas of development on the Property. See Wall Direct, Figure VI-1.

Finally, there is a dispute about whether the mean historic high water mark reached as far as the historic location of Little River at the Property. At the base of this dispute is a relative dearth of reliable information about the Little River prior to the installation of multiple bridges and dams across the many brooks and rivers downstream. On this point, all expert witnesses agreed that there was no primary evidence from surveyed maps of any vintage on the extent of any tidal evidence in any portion of the Little River’s historic course. Nor could any expert witness locate any contemporaneous first-hand observation or measurement of tidal influence in the Little River at any time in history. As noted above, all expert witnesses agreed that the best evidence available was from the Freeman Report and the Pierce Plan. See Freeman Report and Pierce Survey Map, Exhibits 5, 5A, Blowups A, B and C.

## **II. Resolution of Issues**

### **A. Standard of Review**

As the person contesting the Department’s position in this adjudicatory permit proceeding, the Petitioner had the burden of going forward in this proceeding with credible evidence from a competent source to prove its claims. See Matters of Town of Freetown/Town of Lakeville, Docket Nos. 91-103 and 91-112, Recommended Final Decision, 8 DEPR 55, 56 (February 14, 2001), *adopted by* Final Decision, 8 DEPR 55 (February 26, 2001) *and cases cited therein, including* Matter of Daugherty, Docket No. 97-023, Partial Directed Decision, (October

28, 1997) (waterways license appeal). The Petitioner must make its case by a preponderance of the evidence. *See* Cella, Administrative Law and Practice, § 243.

**B. Issue No. 1: Whether Petitioner has standing to request an adjudicatory hearing under the terms of M.G.L. c. 91, § 18 and 310 CMR 9.17?**

I conclude that the Petitioner has standing to request an adjudicatory hearing upon a Chapter 91 determination of applicability by the Department by establishing via affidavit the requisite number of its resident group and their consent to representation in this matter. The Waterways Regulations that govern the issuance of Chapter 91 determinations of applicability provide that “[a]ny person who would otherwise have the right to an adjudicatory hearing pursuant to 310 CMR 9.17 may appeal the issuance of any determination of applicability....” *See* 310 CMR 9.06(6). The regulation quite explicitly gives the right to any group of ten or more residents of the Commonwealth to “have the right to an adjudicatory hearing concerning a decision by the Department to grant or deny a license of permit” if such residents “have submitted written comments within the public comment period.” *See* 310 CMR 9.17(1)(c). There is no dispute that Petitioner submitted written comments. There is no obligation on the part of the Petitioner to prove aggrievement. The Petitioner clearly has the standing to have requested an adjudicatory hearing of the NDA.

**C. Issue No. 2: Whether the Department erred in its determination under 310 CMR 9.04 that there was no jurisdiction over the former course of the Little River on the property that was the subject of the Petitioner’s Request for Determination of Applicability?**

**1. Location of Historic Course of Little River.**

In determining whether the Department had jurisdiction over the former course of the Little River, it is first necessary to determine whether the location of the former course of the Little River can be identified with reasonable certainty and whether a portion of this former

course is on the Property at issue. I conclude that the preponderance of the evidence establishes that the former course of the Little River is that shown on the Pierce Plan. *See* Piece Plan, Ex. 5 and Blowup C. This location is also consistent with two other plans in evidence dated 1853 and 1875. *See* Ex. 27E (1853 C. J. Frost map) and Ex. 27F (1875 Beers map). Both Petitioner's and the Department's expert witnesses concluded that this location was the most likely location of the historic course of the Little River. *See* Hearing Testimony of Alexander Strycky at Vol. I, p. 276-77, and Kaiser Direct, P.E., ¶¶ 8-9. While the Property Owner disputed this location, I found that the expert testimony amounted to speculation about channel alteration based on a general history of activities in the area, but not by any direct historical evidence.

2. *Applicable Regulatory Language Defining Tidelands and Waterways.*

This brings me to the question of whether this original historic course of the Little River was a "Tideland" within the Department's jurisdiction. This question is governed by the terms of the Waterways Regulations, specifically, 310 CMR 9.04, Geographic Areas Subject to Jurisdiction, which states:

The following geographic areas, generally considered "trust lands," are subject to licensing and permitting by the Department under 310 CMR 9.00:

all waterways, including flowed tidelands...and filled tidelands

The definitions of Trust Lands, Waterways and Tidelands (including both Filled and Flowed Tidelands) all consistently state that the limit of Departmental jurisdiction is located at the high water mark, which is further defined as a mean or average daily high water mark. *See* 310 CMR 9.02 Definitions of Trust Lands, Waterways, Tidelands, Filled Tidelands and Flowed Tidelands.

In particular, the definition of Tidelands is as follows:

Tidelands means present and former submerged lands and tidal flats lying between the present or historic high water mark, whichever is farther landward,

and the seaward limit of state jurisdiction. Tidelands include both flowed and filled tidelands, as defined herein.

While the present high water mark may be easy to gauge from current records, the historic high water mark in the case of a waterway like the Little River which has been moved and filled is another question. The Waterways Regulations define the Historic High Water Mark as follows:

Historic High Water Mark means the high water mark which existed prior to human alteration of the shoreline by filling, dredging, excavating, impounding, or other means. In areas where there is evidence of such alteration by fill, the Department shall presume the historic high water mark is the farthest landward former shoreline which can be ascertained with reference to topographic or hydrographic surveys, previous license plans, and other historic maps or charts, which may be supplemented as appropriate by soil logs, photographs, and other documents, written records, or information sources of the type on which reasonable persons are accustomed to rely in the conduct of serious business affairs. ...

310 CMR 9.02, Definitions. "High Water Mark" is also a defined term in the regulations which is defined to be the "mean high tide line" to be determined through a specific formula and using data collected by the federal government's National Ocean Survey. Obviously, in the case of determination of an historic mean high tide line, this federal data would often not be available, as in this case, and the best available competent evidence is all that can be reviewed.<sup>2</sup>

3. *Weight of Historic Evidence Indicates No Daily Tidal Influence in the Little River.*

The Department's expert witness in this case, Mr. Alex Stryzky, testified that the he examined historic records of other licenses in the vicinity and the most relevant historic maps to

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<sup>2</sup> The Property Owner argues that the evidentiary standard for the number and reliability of data points is mandated by the 310 CMR 9.00 definition of "High Water Mark," namely using an "arithmetic mean of the water heights observed at high tide over a specific 19-year Metonic Cycle (the National Tidal Datum Epoch)...." Imposing such an evidentiary burden upon a determination of historic high water marks does not appear to be mandated by the regulations, since the definition of "Historic High Water Mark" allows the use of a variety of historical sources of information. On the other hand, to meet a preponderance of the evidence standard, the number and quality of data available must be sufficient to support a conclusion regarding the location of a historic high water mark. Because I conclude that the preponderance of historic evidence supports a conclusion that the Little River was not a Tideland, I do not have to reach the question of how many data points would be required to calculate the location of an historic high water mark.



this type of inquiry, the mid-19<sup>th</sup> century maps prepared by the United States Coast Survey. *See* Strysky Direct, ¶¶ 7-8. Typically, the United States Coast Survey maps or other historical maps would indicate high and low water marks in the water bodies surveyed. However, Mr. Strysky was unable to locate any survey maps with high and low water marks in the Little River. Strysky Direct, ¶¶ 8-9 and Attachment A thereto. No other expert in this case has been able to locate any maps with indication of a high or low water mark in the Little River, nor have they been able to locate any relevant information in other license records.

The lack of any indication of high or low water marks on maps has led all experts in this case to look at other historical sources of information regarding whether the Little River in the vicinity of the Property was a “Tideland” as that term is defined in the Waterways Regulations. This inquiry requires evidence from sources “of the type on which reasonable persons are accustomed to rely in the conduct of serious business affairs” that the portion of the Little River on the Property was located below the “high water mark which existed prior to human alteration.”<sup>3</sup> 310 CMR 9.02, Definition of Historic High Water Mark. Such sources may include “topographic or hydrographic surveys, previous license plans, and other historic maps or charts, which may be supplemented as appropriate by soil logs, photographs, and other documents, written records” or other reliable information sources. *Id.*

There is very limited indirect evidence regarding tidal influence upon the Little River, as all expert witnesses for all parties admitted. The Little River was cut off from any possible daily influence of the Boston Harbor tides by the construction of the Craddock Dam at Broadway in

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<sup>3</sup> The Department argues that the phrase “which existed prior to human alteration” should be interpreted as being equivalent to “which existed apart from human alteration.” This argument is apparently in response to arguments by the Property Owner that rising sea levels must be taken into account in determining historic high water marks and such historic high water marks must be frozen in time as of the time of the Colonial Ordinances of the 1640s. I need not address these arguments, since I have concluded that the Petitioner has failed to meet its burden of proof to demonstrate that the Little River was a Tideland even as of the time of the best available evidence in 1903-1904. I would note that the definition of the term “Tidelands” includes the concept that jurisdiction extends to the “present or historic high water mark” whichever is further “landward.” *See* 310 CMR 9.02.

Cambridge at some time after the completion of the Freeman Report in 1904 and currently the Amelia Earhart Dam blocks the tides. Even if there were no impediments to tidal flow, the Little River was moved, and a portion of its original course was filled in. There is no current way to measure tidal influence in the Little River's historic course. Therefore, the only way in which to assess historic tidal influence in the Little River's original course is to review the Freeman Report (Ex. 5) and its accompanying Pierce Survey Plan (Ex. 5A and Blowups A, B, and C) and the few other historic accounts and maps of the area prior to installation of the Craddock Dam.

This evidence consists of a half dozen references to the Little River and near vicinity, including one recorded day of no tidal influence in the Little River at the historic location of Hills Road. The Freeman Report references are as follows:

- (1) "The influence of the ordinary harbor tides is said to be almost unnoticeable upstream from the Arlington Branch Railroad, but the higher spring tides, just after each full moon and new moon, change the level perhaps an inch or two up as far as Little Pond." Ex. 5, Appendix to the Freeman Report, p. 27.<sup>4</sup>
- (2) "Observations by a recording tide gauge for several days about April 26, 1904, showed a total fluctuation of about 0.50 feet at the culvert where the old Lexington & Arlington Railroad crosses Little River. This was at a time approaching high spring tides." Ex. 5, Appendix to the Freeman Report, p. 28.
- (3) "The height in Little Pond under present conditions is slightly influenced by high tides at the spring tide season." Ex. 5, Appendix to the Freeman Report., p. 29.
- (4) Freeman reported also results of a survey of "Ordinary Heights of Water in the Marshes" surrounding the Little Pond, Spy Pond, Wellington Brook, Little River and Alewife Brook in Table A on page 31 of his Report. He notes that below the "Large Pool, near confluence of the Little River and Alewife Brook" and that "Below this point, elevation of water and duration of flow are affected by daily tides." Locations gauged "below this point" included the "Alewife Brook, just

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<sup>4</sup> It is unclear whether this reference to the "Arlington Branch Railroad" bridge is to the Lexington and Arlington Railroad Bridge at the confluence of the Little River and the Alewife Brook, or to a railroad bridge that carried the main Arlington Railroad line that was further downstream over the Alewife Brook. Since all the expert witnesses appeared to assume that all of Mr. Freeman's references to a railroad bridge were to what I have defined as the "Lexington Branch Railroad Bridge" at the confluence of the Little River and Alewife Brook, I have adopted their assumptions in this decision. This assumption favors the Petitioner.

below culvert Boston & Maine, Arlington Branch Railroad.”<sup>5</sup> This is from Freeman’s own survey of conditions as of 1903 - 1904. Ex. 5, Appendix to the Freeman Report, p. 31, Table A.

One can reach only one reasonable conclusion from reviewing Mr. Freeman’s discussions of tidal influence in the Little River, namely, that there was no daily tidal influence but merely influence during extreme astronomical or storm tide events. From the first reference in Mr. Freeman’s report, it is clear that Mr. Freeman is implying no daily tidal influence in the Little River. He states that the higher spring tides change the level of water in the Little River only “an inch or two,” and, therefore, one can conclude that any tidal effect in the Little River during ordinary daily tides would be less than an inch or two, hence his statement that they are “almost unnoticeable” in any portion of the Little River upstream of the Arlington Branch Railroad. *See* Cross-Examination of Robert Daylor, Hearing Transcript, Vol. I, p. 225. From the second reference, Mr. Freeman makes clear that tidal variation at the former Lexington Branch Railroad Bridge was only 0.50 feet or 6 inches at the Lexington Branch Railroad Bridge during extreme tide events. This location is a considerable distance downstream from the Property location, and presumably there would be a far lesser influence at the Property as confirmed by the other statements in the Freeman Report and the water elevation readings at Hills Road. This directly contradicts the Petitioner’s expert opinion by Dr. Kaiser in which he attempts to construct a model attributing a tidal change of 1.2 feet to the Little River during normal daily tide events. From the third reference, one can conclude that the height in Little Pond is not influenced during daily tides, because Mr. Freeman reports that it is only “slightly influenced” by extreme tidal events. Finally, the fourth reference reports directly that there is only a daily tidal influence

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<sup>5</sup> Again, this could be the railroad bridge downstream from the confluence of the Little River and the Alewife Brook, because there is already a data point at the “Large Pool, near the confluence of the Little River and Alewife Brook,” and this reference is to a sample only in the “Alewife Brook.” However, since all the witnesses assumed references to railroad bridges in the Freeman Report in this area were to the more upstream Lexington Branch Railroad Bridge, I will maintain that assumption.

downstream of the confluence of the Little River and the Alewife. Therefore, Mr. Freeman is clearly stating that the Little River was not influenced by daily tides.<sup>6</sup>

The Freeman Report also included many water elevation readings throughout the river system, including a very important reading at the Hills Road in Belmont. It is important to note that the evidence in the record demonstrated that the location of Freeman's water elevation readings at Hills Road were taken almost precisely where the Little River crossed the Property at issue. See Ex. 5 and Blowup C; Wall Direct, Figure IV-1 (overlay of Property with Pierce Plan showing Hills Road at Little River crossing location). Freeman's data showed no change in elevation in the Little River at Hills Road during a complete tide cycle in Boston Harbor. See Attachment B to Strysky Direct and Exhibit 5A (enlargement of detail of Ex. 5). This data is particularly significant because on the date of the recording, the tide in Boston Harbor was noted to be greater than 11 feet, a tide in excess of what Freeman reported to be contemporaneous mean high tide in Boston Harbor, and a Full Moon Spring Tide, which is an exceptional tide. See Strysky Direct, p. 7, ¶ 13 and Attachment B thereto; Rebuttal Testimony of W. Sterling Wall ("Wall Rebuttal"), p. 7, ¶ D and Exhibit B thereto. Therefore, if the Little River at the Property location at Hills Road was not changed by a higher than mean high tide, then the Little River would not have been influenced by daily tides and the mean high water mark could not have reached into the Little River at the location of the Property at issue. See Wall Rebuttal, p. 8.

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<sup>6</sup> These findings are echoed in one other contemporaneous report, the Brewster Report, Ex. 9, in which the author reported that the Alewife Brook and streams flowing into it were only subject to tidal action during extreme tidal events:

Whenever there was a course of exceptionally high tides the normally sluggish but steady flow of the brook towards the sea was replaced by a rather strong current in the opposite direction which brought salt water from the Mystic River.

See Ex. 9, pp. 44-45; see also, Strysky Direct, ¶ 11. In reading this statement, one must note that Mr. Brewster's observation is not specific to the Little River but to the upper reaches of the Alewife Brook downstream of the Little River. Therefore, it is not definitive. However, this historical source does corroborate Freeman's more specific findings that in the area downstream of the Little River, tidal influences were limited to "exceptionally high tides."

Finally, the Freeman Report and other historical records show that the Little Pond was used as fresh water supply sources for the City of Cambridge for many years. During this time, there is discussion of the surge of tides during extreme tidal events into the Little River and Wellington Brook that necessitated the periodic use of flashboards near the confluence of the Little River and Alewife Brook at the Lexington Branch Railroad Bridge. This also implies that there was no daily tidal influence, but only tidal influence during extreme tide events. *See* Freeman Report, Ex. 5 at p. 66 and City of Cambridge Water Department Reports, Ex. 14 at p. 5. Historic records also demonstrate a multitude of freshwater vegetation. *See* Wall Direct, p. 20. While the evidence of freshwater in Little Pond is not definitive, this evidence bolsters the specific data and statements showing no daily tidal influence in the Freeman Report.

The weight of this evidence demonstrates that there was no daily tidal influence in the Little River at the Property location, but only an influence during extreme tide events. All parties agreed that it was the mean daily high water mark that would signify jurisdiction of the Department to require licenses under 310 CMR 9.00, and I concur with that analysis based on my review of the regulatory definitions. *See* discussion of 310 CMR 9.02 Definitions, *supra* at pp. 7-8. I conclude that the preponderance of evidence in the record shows that the historic course of the Little River at the Property was not a Commonwealth Tideland as that term is defined in 310 CMR 9.02.

**4. *Dr. Kaiser's Opinion did not have Sufficient Foundation to Meet Petitioner's Burden of Going Forward.***

In an attempt to counter this evidence, the Petitioner submitted expert testimony of its witness, Dr. Stephen Kaiser, in which he constructed an engineering theory that the mean daily high water mark did reach the Little River at the Property location in 1903 -1904 at the time of the Freeman Report. Dr. Kaiser based this opinion upon data extracted solely from the Freeman

Report. See Prefiled Direct Testimony of Dr. Stephen Kaiser (“Kaiser Direct”), pp. 11-12, ¶ 24. He then deducted head loss from a number of bridges in the waterways between Boston Harbor and the Little River by using head loss figures from floodwater studies reported in 1982 and 1986 FEMA Reports (Ex. 10) to better reflect a “natural” condition prior to human alteration. Kaiser Direct, pp. 12-13, ¶¶ 26-7. Finally, he added an adjustment based upon topographic factors of the stream system, such as the narrowness and meandering of streams and the loss of waters into low-lying marshes adjacent to the streams in question. Kaiser Direct, pp. 15-17, ¶¶ 33-34. Even with all this analysis, Dr. Kaiser admits that his calculations cannot account for a daily tidal influence at the Property without a further assumption of an obstruction between the Alewife and the Little River, probably at the former Lexington Branch Railroad Bridge near the confluence of the Little River and the Alewife Brook. Kaiser Direct, pp. 14, ¶ 30 and p. 15, ¶ 32. Based on all of the above, Dr. Kaiser opined that the historic high water mark would have extended into the area of the Little River that historically crossed the Property and that tidal variation would have averaged 1.2 feet and reached an average daily elevation of 10.0 feet (compared to Boston Base elevation, presumably).

**(a) Sufficiency of Data and Calculation Methods are without Sufficient Foundation.**

Looking first at the basic analysis, Dr. Kaiser relied upon only 13 data points from the Freeman Report, namely, 13 water elevation readings during tide cycles on the Alewife Brook at the Massachusetts Avenue Bridge. Kaiser Direct, pp. 11-12, ¶ 24 and Hearing Testimony of Dr. Stephen Kaiser, Vol. I., pp. 33-7 (clarifying that there were 13, not 14 data points). It is not at all clear from Dr. Kaiser’s prefiled testimony why these 13 data points were selected and why they would represent a sufficient foundation for his extrapolation of daily high tide elevations from the Alewife Brook at Massachusetts Avenue (which is where the 13 water elevation readings

were taken) and into the upper reaches of the Little River (which is where the Property is located). Dr. Kaiser did not provide a sufficient explanation in either his prefiled or hearing testimony to justify why only 13 data points would be a scientifically reliable data set for the purposes of establishing mean historic high water mark. He also did not explain why he calculated only a simple arithmetic average of the 13 elevation readings to come up with his conclusion that the mean daily tidal variation on the Alewife Brook at the Massachusetts Avenue Bridge was 1.7 feet. Kaiser Direct, pp. 11-12, ¶ 24 and Kaiser Hearing Testimony, Vol. I, p. 46. Dr. Kaiser admitted that 10 of the 13 tidal elevation readings were taken during above average tides, using the contemporaneous mean high tide figures reported by Mr. Freeman, with only 3 data points from times of below average high tides. Kaiser Hearing Testimony, Vol. I, p. 38. He also admitted that it would have been better to utilize an equal number of above average high tide days and below average high tide days. Kaiser Hearing Testimony, Vol. I, pp. 115-16. However, Dr. Kaiser did not make any adjustments to his calculation to account for the discrepancy. Kaiser Hearing Testimony, Vol. I, p. 38.

Dr. Kaiser also admitted that he did not research whether his selected days were dates on which extreme astronomical tides or storm events might have occurred. Kaiser Hearing Testimony, Vol. I, pp. 45-6. To the contrary, the Property Owner's expert witness, Mr. Sterling Wall, did research the astronomical and storm conditions on the 13 dates selected by Dr. Kaiser as the foundation of his analysis. Mr. Wall testified that of all of the 13 data points, only 2 were taken on dates representing normal meteorological or astronomical conditions affecting the tide. See Wall Hearing Testimony, Vol. I., pp. 148-49. Mr. Wall calculated the tidal elevation change in the Alewife Brook at the Massachusetts Avenue Bridge based upon these two normal tide data points, and he concluded that the average fluctuation at that location would have been 0.6 feet,

not 1.7 feet. *Id.* This calls into question how Dr. Kaiser's unweighted average of the 13 data points from the Freeman Report could have been representative of mean daily historic high water mark scenario.

In addition, Dr. Kaiser discredited his calculation methodology by his own testimony. Dr. Kaiser admitted that he did not employ any engineering or scientific methodologies for estimating historic high tide used by coastal engineers or coastal hydrologists, nor did he conduct research to determine whether such methods existed. Kaiser Hearing Testimony, Vol. I, pp. 44-5. Dr. Kaiser also did not research what would be considered a scientifically or statistically acceptable number of data points for the conduct of his analysis to extrapolate the high tide mark into the upper reaches of the Little River. *Id.* Although Dr. Kaiser has significant engineering training and experience in coastal hydrology, his opinion is without foundation given his lack of explanation for his chosen methodologies and data set.

***(b) Dr. Kaiser's Reliance upon FEMA Flood Methodology was Without Sufficient Foundation.***

Dr. Kaiser also did not justify his reliance upon FEMA hydraulic or head loss data from 100-year flood events. Use of these FEMA calculations does not make sense. The resistance created in a high-volume, high-water flood event cannot be analogous to the resistance of structures during a low velocity rising of daily tides. *See* Daylor Direct, p. 19, ¶ 5. Even Dr. Kaiser admitted that "in the hundred-year storm, there's no question the flood elevations get quite high up on the arch of the bridges," which creates greater friction and resistance. Kaiser Hearing Testimony, Vol. I, p. 114. Using these high resistance numbers skews the numbers to result in an assumed higher tidal elevation into the Little River. Dr. Kaiser also did not research what was an appropriate methodology, and he acknowledged that he knew of no other study in



which flood hydraulic loss data were applied to estimate tidal hydraulic loss from bridge obstructions. *See* Kaiser Hearing Testimony, Vol. I, p. 49.

On the other hand, the Property Owner's expert witness, Mr. Robert Daylor, whom I find to be highly qualified to testify to the hydraulic principles at work in these two scenarios, flood versus rising tide, testified convincingly that the two scenarios were not analogous. *See* Daylor Direct, p. 15, ¶ 5; Hearing Testimony of Mr. Robert Daylor, Vol. I, pp. 220-21. Mr. Daylor testified that:

The velocity and the volume of water that reaches the very upper ends of estuaries like this, that tidal flow has a very, very low velocity, and therefore its [head] losses are small.

*Id.* Comparing the FEMA 100-year flood event and the rising tide scenario in the estuary system that includes the Little River, Mr. Daylor testified that this would not be appropriate because “[i]t is simply completely different hydraulics.” *See* Hearing Testimony of Mr. Robert Daylor, Vol. I, p. 222. Dr. Kaiser never provided any adequate rebuttal to Mr. Daylor's testimony on this point.

**(c) *Dr. Kaiser's Opinion with respect to Channel Effects was without Sufficient Foundation.***

The final portion of Dr. Kaiser's analysis was his analysis of the specific topographic and other peculiarities of the channels in the stream system. *See* Kaiser Direct, ¶¶ 33-34. Dr. Kaiser appears to have extracted information on channel resistance from one or more of the FEMA reports and applied this “proportionally” to the stream system at issue; however, Dr. Kaiser did not sufficiently explain this opinion in his prefiled direct testimony. *Id.* In addition, on cross-examination, Dr. Kaiser admitted that he utilized an extrapolation of stream resistance from one of the FEMA reports in 1986, and he did not review the Pierce survey details of the actual 1904 stream channel conditions or any other source of information to adapt the FEMA model to the 1904 conditions. *See* Kaiser Hearing Testimony, Vol. I, pp. 76-82. In addition, Dr. Kaiser

admitted that he did not conduct research to determine what would have been the most scientifically appropriate model or methodology for calculating such resistance. *See* Kaiser Hearing Testimony, Vol. I, pp. 73-75. This testimony makes clear that there is no adequate foundation for Dr. Kaiser's opinion that he had correctly accounted for natural stream channel effects upon tidal head loss within a reasonable degree of scientific certainty.

**(d) *Dr. Kaiser's Testimony of an "Alleged" Obstruction at the Lexington Branch Railroad Bridge has no basis in the Historical Evidence.***

As noted above, even if all of Dr. Kaiser's data and methods were accepted, Dr. Kaiser admitted that he could not arrive at a conclusion that there was daily tidal influence in the Little River at the Property location without assuming a significant obstruction at the Lexington Branch Railroad Bridge. Dr. Kaiser testified that his assumption of a blockage at the former Lexington Branch Railroad Bridge in particular has "overwhelming significance" to his testimony. *See* Prefiled Rebuttal Testimony of Dr. Stephen Kaiser ("Kaiser Rebuttal"), p. 7, ¶ 12. Dr. Kaiser further testified that "...this railroad bridge with its weir and significant flow obstruction is the single most important difference between conditions in 1904 and the historic Little River condition with no obstructing bridges and weirs." Kaiser Rebuttal, p. 10, ¶ 20. Dr. Kaiser sought to dismiss the data showing no tidal influence at the Hills Road crossing of the Little River by contending the existence of an obstruction at Lexington Branch Railroad Bridge. *Id.*

The historic location of the Lexington Branch Railroad Bridge is shown on the Pierce Plan, Ex. 5 and Blowup C, as near the confluence of the Little River and the Alewife Brook. It was a bridge carrying a spur line from the larger Arlington Branch railroad. It was referred to on the Pierce Plan as the "Old Lexington Branch Railroad Bridge." Witnesses, both historical and those experts in this current case, alternately referred to the railroad bridge nearest the

confluence of the Little River and the Alewife Brook as the “Arlington Branch,” the “Lexington Branch” and the “Lexington and Arlington Branch” Railroad bridge. For consistency sake, I will refer to this bridge as the “Lexington Branch Railroad Bridge.”

There is no evidence in the record that any obstruction existed at the Lexington Branch Railroad Bridge in the 1903-1904 period when the Freeman and Pierce work was done. To the contrary, what little evidence pertains to this subject shows that obstructions at this location were removed by the date of the Freeman Report. Dr. Kaiser testified that he relied upon the 1870 Report of the Water Registrar of Cambridge (the “1870 Cambridge Report”) which does state that “flash boards have been erected on Alewife Brook where it passes under the Lexington Branch Railroad.” *See* Ex. 14, 1870 Cambridge Report. However, the Freeman Report states that these flash boards were only in use “for a term of years, probably from 1870 to 1887,” which statement implied that they were not in use during the 1903-04 study period. *See* Freeman Report, Ex. 5 at p. 33. The fact that the flashboards were removed by 1887 at the latest is confirmed by another contemporary source provided by the Petitioner, namely, the report, On the Drainage, Reclamation and Sanitary Improvement of Certain marsh Lands in the Immediate Vicinity of Boston, by William Lyman Underwood, dated January 24, 1901, Ex. 6. In that report, Mr. Underwood, a MIT-trained engineer, reported that as of 1887, Cambridge stopped using water from the Fresh, Little and Spy Ponds for the most part and switched its reliance to water from Stony Brook in Waltham due to many pollution issues in the Fresh Pond system. *See* Ex. 6 at p. 70 (“...Little and Spy Ponds and Wellington Brook were abandoned as sources of water supply.”). This made the use of the flash boards of no utility for water supply purposes.

More significantly, Mr. Pierce’s survey shows no flash boards or other obstructions at the Lexington Branch Railroad Bridge. *See* Pierce Plan, Ex. 5 and Chalk Blowup A. This survey

plan was excruciatingly detailed and meticulous. Elevations for stream bottoms as well as bank heights were noted throughout for all waterways, and the location of bridges and other obstructions were also noted in the Pierce Plan. Mr. Daylor, a registered land surveyor, whom I conclude is highly qualified to testify to such matter, stated unequivocally that:

The Pierce survey, which was an actual survey of this watershed, does not find, locate, identify, any such structures by an actual survey; and there is no greater evidence than an actual on-the-ground survey at the time of this analysis.

*See Daylor Hearing Testimony, Vol. I., pp. 199-200.* Mr. Daylor also testified that Mr. Pierce would have been required to indicate the presence of all obstructions to hydraulic flow in a stream system as part of his professional land survey responsibilities for the Freeman Report.

*See Daylor Hearing Testimony, Vol. I., pp. 227-28.* Mr. Daylor, a registered land surveyor, testified as follows:

R. And as a registered land surveyor, are you familiar with the practices, good practices, engaged in by registered land surveyors of the sort that would have been doing this work for Mr. Pierce at the turn of the last century?

A. I am.

Q. And would it have been customary and professionally appropriate to note the location of significant features that would be permanent features?

A. Yes, particularly if the survey was done for a hydraulic study of the channel. If those structures existed in a way that was meaningful to the hydraulic study, they would have measured them and identified them in the survey.

*See Daylor Hearing Testimony, Vol. I., pp. 227-8.* In fact, Mr. Pierce did note many other structures crossing the various streams in the system, including a former obstruction, the tide gates at the Broadway Bridge that had since been removed and were in ruins. *See Pierce Plan, Ex. 5 and Chalk Blowup A.* This illustrates the meticulous nature of the Pierce survey plan.

Dr. Kaiser did not rebut Mr. Daylor's and Mr. Pierce's testimony. Indeed, he admitted to being puzzled by why neither Mr. Freeman nor Mr. Pierce had noted the presence of the flash boards or other obstruction at the Lexington Branch Railroad Bridge. *See Kaiser Hearing Testimony, Vol. I., pp. 70-71* (Noting absence of reference to obstruction at the Lexington Branch Railroad bridge as "most unusual given the data in [Freeman's] own report" and the thoroughness of the Freeman/Pierce work). Dr. Kaiser admitted that any flash board structure would have been in plain sight during Mr. Freeman's and Mr. Pierce's work on the Little River. *See Kaiser Hearing Testimony, Vol. I., pp. 112-13*. Instead, Dr. Kaiser tried to construct theories as to why there was no evidence of an obstruction at the Lexington Branch Railroad Bridge, including his suggestion that Mr. Freeman was speaking about different flashboards or that Mr. Freeman made an "unfortunate omission" in his report. *See Kaiser Hearing Testimony, Vol. I., pp. 66 and 73*. The historic evidence in the record does not support a conclusion that there was an obstruction at the Lexington Branch Railroad Bridge; Dr. Kaiser's assumption that there was such an obstruction was without sufficient foundation.

In sum, Dr. Kaiser's analysis was not supported by sufficient evidence in the record or by a foundation of established scientifically appropriate methods. M.G.L. c. 30A, § 11 requires that evidence be reliable in order for it to be accepted and given weight in an adjudicatory proceeding. That statute provides:

Evidence may be admitted and given probative effect only if it is the kind of evidence on which reasonable persons are accustomed to rely in the conduct of serious affairs.

M.G.L. c. 30A, § 11. Dr. Kaiser's opinion is not sufficiently reliable to meet this evidentiary standard.

All the other evidence in the record shows no daily tidal influence in the Little River -- rather only an influence during extreme tidal events. I conclude that the Department did not err in determining that there was no jurisdiction under 310 CMR 9.04 over the former course of the Little River on the Property in its Negative Determination of Applicability. *See* March 3, 2008 Negative Determination of Applicability, Ex. 4. I also conclude from the text of the Negative Determination of Applicability and the testimony of Mr. Strycky that the Department conducted a thorough investigation before reaching its conclusion and that the conclusion was reasonable and well justified by the reliable historical information that was available.

**D. Issues Nos. 3 and 4: These Issues Are Moot Because of my Conclusion that the Department has no Jurisdiction over the Property**

Because I conclude that the Department has no jurisdiction under terms of 310 CMR 9.00 over the Property, I need not reach Issues Nos. 3 and 4.

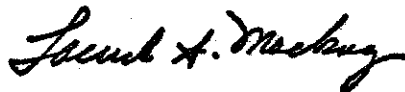
**III. Conclusion**

Although I conclude that the Petitioner has established standing to bring this appeal, the Petitioner has not carried its burden of going forward to demonstrate jurisdiction over the property under 310 CMR 9.00. The preponderance of the evidence supports the Department's conclusion that the daily mean high water mark did not reach into the historic portion of the Little River which crossed the Property. Therefore, the area is not a Commonwealth Tideland, and there is no jurisdiction under 310 CMR 9.00. If the Commissioner adopts this Recommended Final Decision as her Final Decision, I recommend that she direct the Department's Division of Wetlands and Waterways prepare a draft Final Determination of Applicability consistent with the Final Decision.

**NOTICE- RECOMMENDED FINAL DECISION**

This decision is a Recommended Final Decision of the Presiding Officer. It has been transmitted to the Commissioner for her Final Decision in this matter. This decision is therefore not a Final Decision subject to reconsideration under 310 CMR 1.01(14)(e), and may not be appealed to Superior Court pursuant to M.G.L. c. 30A. The Commissioner's Final Decision is subject to rights of reconsideration and court appeal and will contain a notice to that effect.

Because this matter has now been transmitted to the Commissioner, no party shall file a motion to renew or reargue this Recommended Final Decision or any part of it, and no party shall communicate with the Commissioner's office regarding this decision unless the Commissioner, in her sole discretion, directs otherwise.



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Laurel A. Mackay  
Presiding Officer

## SERVICE LIST

In The Matter Of: AP Cambridge Partners II, LLC

Docket No. 2008-069

File No. JD07-2094  
Belmont/Cambridge

### Representative

### Party

Thomas B. Bracken, Esq.  
33 Mount Street  
Boston, MA 02108  
[Thomas.bracken@earthlink.net](mailto:Thomas.bracken@earthlink.net)

APPELLANTS  
Coalition to Preserve the Belmont  
Uplands

Michael A. Leon, Esq.  
Nutter McClennen & Fish LLP  
155 Seaport Boulevard  
Boston, MA 02210-2604  
[mleon@nutter.com](mailto:mleon@nutter.com)

APPLICANT  
AP Cambridge Partners

Samuel Bennett  
MassDEP –Office of General Counsel  
1 Winter Street  
Boston, MA 02108  
[Samuel.Bennett@state.ma.us](mailto:Samuel.Bennett@state.ma.us)

DEPARTMENT

Cc:  
Mary Trudeau  
Belmont Conservation Commission  
19 Moore Street  
Belmont, MA 02478  
[mtrudeau@town.belmont.ma.us](mailto:mtrudeau@town.belmont.ma.us)

CONCOM

Thomas G. Younger  
Town Administrator  
Town of Belmont  
455 Concord Avenue  
Belmont, MA 02478  
[tyounger@town.belmont.ma.us](mailto:tyounger@town.belmont.ma.us)

MUNICIPALITY

Robert W. Healy  
City Manager  
Cambridge City Hall  
795 Massachusetts Avenue  
Cambridge, MA 02139  
[Ccitymanager@cambridgema.gov](mailto:Ccitymanager@cambridgema.gov)

MUNICIPALITY

Date: May 28, 2009



COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

13,532  
REAL  
CASE  
NEG

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In the Matter of  
  
City of Cambridge,  
Department of Public Works

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June 1, 2007  
Docket No: 2005-088  
Docket No. DEP-05-805  
DEP File No. 123-175  
Cambridge

Final Decision

This appeal involves a project by the Cambridge Department of Public Works to control combined sewerage overflows (CSOs) to the Little River and Alewife Brook. The work will separate sewer and stormwater flows as part of a court-ordered plan to improve water quality in the Charles, Alewife, Boston Harbor and other related water bodies. The project consists of the construction of a stormwater management system — culverts, a sediment forebay, and a 3.5 acre detention wetland to provide some treatment prior to discharge into the Little River upstream of the Alewife. The Department issued a superseding order for the project, affirming the local order and finding that the design meets the requirements of the wetlands regulations and the Department's Stormwater Management Policy. A citizen group appealed, citing availability of an alternative site location outside the riverfront area, stating concerns about flooding and flood storage volume, and citing various inadequacies in the design of the system.

The Administrative Magistrate issued a Partial Summary Decision followed by a Directed Decision, sustaining the superseding order, largely based upon his conclusion

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that the Petitioner's chief witness was not qualified because he is not a professional registered engineer or competent to provide land valuation testimony. While the hearing rules do require summary decision to be based upon evidence admissible in Massachusetts courts, more generally the Department conducts its hearings using the standard of evidence on which "reasonable persons are accustomed to rely in the conduct of serious affairs." M.G.L. c. 30A, s. 11(2), 310 CMR 1.01(13)(h).<sup>1</sup> The wetlands regulations allow the issuing authority to require an applicant to provide supporting materials from a registered professional engineer or other professionals with specialized expertise but require "credible evidence from a competent source" to meet the burden of going forward at a hearing. 310 CMR 10.05(4)(h); 310 CMR 10.03(2).

The Department has determined witnesses are disqualified because they lacked specialized knowledge on the subject area of their testimony, but not for lack of a professional license. I am not persuaded by the analysis of precedent by the Administrative Magistrate that professional licensure is indeed required.<sup>2</sup> I accept the recommendation as to the qualifications of this witness to the extent that Stephen Kaiser was offered as an expert witness within the category of some type of "engineer," but the Department has allowed testimony by individuals based upon their backgrounds and skills without adhering to particularly categorizations. See Matter of Massachusetts Water Resources Authority (Blue Hills Covered Storage Project), Docket No. DEP-04-

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<sup>1</sup>The extent of the expertise of the witnesses, of course, goes to the weight or reliability of the evidence rather than its admissibility.

<sup>2</sup> I am also concerned with such a requirement because it is inconsistent with the regulatory standard and the distinction between individuals responsible for designing and reviewing projects. Certainly conservation commissions, Department staff, and various third parties routinely use their own competencies to address plans prepared by registered professional engineers. I also cannot agree that only a licensed real estate appraiser is competent to provide testimony as to practicable alternatives. There will certainly be circumstances where an alternative may be found impracticable without such expertise, and the regulations themselves suggest that precise calculation of costs is not always necessary.

734, Final Decision, September 20, 2005 (the focus is properly on indicia of specialized knowledge relevant to the proceeding rather than how that knowledge is categorized or defined).<sup>3</sup> I conclude that some of the Administrative Magistrate's recommendations as to a requirement for expert witnesses to hold professional licenses are overbroad, and provide an alternate rationale for reaching the a directed decision in this case.

#### Issue 1 – Project Alternatives for the Riverfront Area

Consistent with the Recommended Decision, I conclude that the alternative advocated by the Petitioner is not a practicable and substantially equivalent economic alternative to the proposed site. To be practicable, an alternative must be available and capable of being done after taking into account costs, existing technology, proposed use, and logistics, in light of overall project purposes. 310 CMR 10.58(4)(c)1. The alternate site is privately owned and the Petitioner conceded that the owner was opposed to loss of the current use. See Affidavit of Elizabeth A. Shaw, Exhibit B, Motion for Summary Decision of Cambridge DPW. The alternative site is not available without acquisition by eminent domain, a legal barrier similar to those identified under the “logistics”<sup>4</sup> factor, at great cost, and incompatible with the public purpose of achieving the environmental benefit of CSO control in an efficient and cost-effective manner. 310 CMR 10.58(4)(c)1. The alternative proposed by the Petitioner was given due consideration, and I am

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<sup>3</sup>Knowledge of matters relevant to wetlands cases can be acquired through education, training or experience, and experts need not be professionals or hold advanced degrees. The actual qualifications of the witness, in terms of what the individual knows about the topic and the facts of the case, are much more important than the individual's title. See, e.g., Matter of Scott Cheney, Docket No. 98-096, Final Decision (October 26, 1999).

<sup>4</sup>“Logistics refers to the presence or absence of physical or legal constraints. . . . An alternative site is not practicable if special legislation or changes to municipal zoning would be required to achieve the proposed use or project purpose.” 310 CMR 10.58(4)(c)1.d.

confident that the project complies with the performance standard for work in the riverfront area.

I also note that this project does appear to qualify for a grandfather provision from the riverfront area regulations, because it was the subject of a draft Environmental Impact Report filed prior to November 1, 1996. 310 CMR 10.58(6)(e). As evidenced by the submission by Cambridge DPW of a notice of project change to the MEPA program and no further MEPA review was required subsequently, the project was unquestionably a component of the overall 1996 CSO control plan developed by the Massachusetts Water Resources Authority. The Department has made this determination for projects in similar circumstances. See Matter of CMW Regional Refuse Disposal District, Docket No. 2000-098, Final Decision, August 13, 2001. The project also appears to fit within the scope of the exemption for work on a conveyance system and facilities related to a regional wastewater treatment plant, because it separates sanitary and storm flows. 310 CMR 10.58(6)(h). Although the work here will redirect flows from the treatment plant, it certainly entails the alteration and replacement of related conveyance systems. The project fits within the language of this exemption, and a project to separate combined sewers creates environmental benefits fully compatible with the purpose of the Rivers Protection Act.

#### Issue 2 - Stormwater Discharge

The parties had differing views on the status of the project under the Department's Stormwater Management Policy. As this case involves alteration of wetland resource areas and buffer zone, as well as the discharge of stormwater, the

applicant must demonstrate that the work will meet the relevant performance standards and will comply with the Department's Stormwater Management Policy. 310 CMR 10.05(6)(b) and Policy, page 1-1 to 1-2 and 2-2 to 2-4. While not reducing or superceding other regulatory requirements, the Policy creates a presumption that projects meeting the nine Stormwater Management Standards satisfy the regulatory requirements under both the wetlands and surface water discharge regulations. Policy, page 1-4.<sup>5</sup> Under the federal and state Clean Water Acts, the combined discharge is governed by an NPDES surface water discharge permit; the sewer component will continue to be covered by that permit and the separated stormwater discharge will be governed by an NPDES general permit for stormwater discharges from small municipalities such as Cambridge. Therefore, it is an "existing" discharge under the Policy.

The proposed work within jurisdiction of the Wetlands Protection Act must comply with the Department's wetlands regulations and stormwater management policy. This case involves a project that has no development component other than the construction of a wetland detention basin and associated facilities to allow separation of existing sewer and stormwater pipes. Because the proposed work involves no new development except for the remediation of stormwater impacts from previously developed areas, it is properly characterized as "redevelopment" under the Policy, so that the standards apply to the maximum extent practicable and at a minimum must improve existing conditions under Standard 7. In fact, a CSO separation project is redevelopment by definition and it is difficult to imagine a project where the improvement of existing conditions is more imperative.

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<sup>5</sup>By complying with the applicable Stormwater Management Standards, a stormwater system design is presumed to protect the interests of the Act. Policy, page 2-5.

The issue for adjudication was whether the project would increase the volume of stormwater discharged to the Little River in violation of Standard 2 or otherwise requiring limitations on the quantity of the discharge. The Petitioner does not contest the assertion of the Department and Cambridge DPW that the project is designed so that post-development peak discharge rates will not exceed predevelopment discharge rates. Instead, the Petitioner is concerned about increased volume of discharge. The Stormwater Standards simply do not require that there be no increase in volume. The Petitioner has not identified any other requirement that would provide the basis for such limitations other than a provision allowing the issuing authority to establish limitations on the quality and quantity of a discharge. 310 CMR 10.05(6)(b). The provision serves in part as the basis for the Department's Stormwater Management Policy, which in turn establishes a presumption that compliance with the standards will meet the regulatory requirements of the wetlands regulations as to the stormwater discharge. The record does not support a finding that the standards are insufficient as applied to this project.

### Issue 3 - Lost Flood Storage Volume Compensation

Compensatory storage must be provided for flood storage volume displaced by a project when the loss will cause an increase in the horizontal extent and level of flood waters during peak flows. The volume of storage is calculated incrementally for each elevation, up to the 100 year elevation, to compensate for conditions prior to construction. 310 CMR 10.57(4)(a). The applicant provided these calculations in its notice of intent, and they were approved by the Department prior to issuance of the superseding order. See Prefiled Direct Testimony of Rachel Freed, para. 22-23. A table

showing compensatory storage is also included in Cambridge DPW's testimony. See Prefiled Testimony of Emmet James Whitehead, para. 11. The Petitioner's complaint is not directed at the accuracy of these calculations but instead with the "narrow case for net flood storage capacity for the basin" rather than flows from the wider Cambridge system. See Rebuttal Testimony of Stephen Kaiser, para. 52. The project under review is the project described in the notice of intent; the applicant is not obligated to design for additional storage to compensate for flows outside the scope of the project. I conclude that the performance standard for bordering land subject to flooding has been met.

#### Issue 4 – Flooding, Siltation, Erosion, and Total Suspended Solids

The Petitioner raised various issues about the adequacy of the forebay and wetland detention basin to function during storm events, causing erosion at the basin's spillways. The Petitioner has failed to show any affect on wetland resource areas from spillway erosion, even assuming it were to occur. I also conclude that the project conforms to the Department's Stormwater Policy for removal of total suspended solids, because it captures the prescribed runoff volume and provides the requisite best management practices. See Prefiled Direct Testimony of Thomas Maguire, para. 37-39. The proposed project meets the 80% removal target, and the discharge from the Wheeler Street drain will be greatly improved over existing conditions by the elimination of the sewerage from the CSO separation. The Petitioner has not supported its claim that the project should be denied because the alternative site would be preferable or that additional conditions are required. See Rebuttal Testimony of Stephen Kaiser, para. 64.

#### Issue 5 – Siltation and Erosion During Construction

The Petitioner's concern is that floodwaters may enter the site during construction and that a condition requiring a one day delay in work imposed by the Cambridge Conservation Commission will be insufficient. Cambridge DPW supplied in its notice of intent an erosion and sedimentation control plan for the construction of the basin as required by the Department's Stormwater Standard 9, based on the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas, dated March 1997, reprinted May 2003. The Petitioner claims that flooding of the basin will lead to trapping of construction vehicles and difficulties in dewatering. Rebuttal Testimony of Stephen Kaiser, para. 65-67. These issues are not wetlands-related impacts governed by any regulatory performance standard.<sup>6</sup> The Petitioner has not met its burden on this issue.

#### Issue 6 – Wetland Identification, Wheeler Street Drain

The Petitioner did not provide any evidence to support an identification of the open area of the Wheeler Street Drain as a wetland resource area. The testimony of the Department's witness is uncontested, that even if the Wheeler Street Drain area has bank it does not serve any wildlife habitat function and therefore meets the performance standard under 310 CMR 10.54. See CHECK Affidavit of Rachel Freed, attached to Department's Motion for Summary Decision, January 27, 2006. The Petitioner has failed to sustain a direct case on this issue.

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<sup>6</sup>The Department shares the general concern that sediments may reach resource areas during storm events from large construction sites and any applicant is advised that failure to comply with specified erosion and sedimentation measures identified in its plan may be subject to enforcement.



## Disposition

I sustain the superseding order of conditions issued to Cambridge DPW for the CambridgePark Drive Area Drainage Project.

The parties to this proceeding are notified of their right to file a motion for reconsideration of this Decision, pursuant to 310 CMR 1.01 (14)(d). The motion must be filed with the Docket Clerk and served on all parties within seven business days of the postmark date of this Decision. A person who has the right to seek judicial review may appeal this Decision to the Superior Court pursuant to M.G.L. c. 30A, §14(1). The complaint must be filed in the Court within thirty days of receipt of this Decision.

  
Arleen O'Donnell  
Acting Commissioner

**SERVICE LIST**

In The Matter Of: City of Cambridge, DPW

Docket No. 2005-088

File No. 123-175

Representative

Party

Anjali Prakash  
City of Cambridge Law Department  
795 Mass Ave  
Cambridge, MA 02139

APPLICANT  
City of Cambridge, DPW

Richard A. Nysten, Jr., Esq.  
Lynch, DeSimone & Nysten, LLP  
12 Post Office Square  
Boston, MA 02109

PETITIONERS  
Resident Group

Rebecca Cutting, Esq.  
DEP – Office of General Counsel  
One Winter Street, 3<sup>rd</sup> Floor  
Boston, MA 02108

DEPARTMENT  
Dept. of Environmental Protection

Cc:  
Rachel Freed  
DEP – Northeast Regional Office  
One Winter Street, 5<sup>th</sup> Floor  
Boston, MA 02108

DEPARTMENT  
Dept. of Environmental Protection

Cambridge Conservation Commission  
344 Broadway  
Cambridge, MA 02139

CONCOM

Thomas LaRosa, General Counsel  
Department of Conservation & Recreation  
251 Causeway Street  
Boston, MA 02114

OWNER  
Department of Conservation & Recreation

Date: June 1, 2007

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OWNER'S APPROVALS  
CITY OF CAMBRIDGE

COMMONWEALTH OF MASSACHUSETTS  
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

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In the Matter of  
Coalition to Preserve  
the Belmont Uplands

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Docket No. 2008-069  
File No. JD07-2094  
Belmont/Cambridge

**FINAL DECISION**

I adopt the Recommended Final Decision of the Presiding Officer. The parties to this proceeding are notified of their right to file a motion for reconsideration of this Decision, pursuant to 310 CMR 1.01(14)(e). The motion must be filed with the Case Administrator and served on all parties within seven business days of the postmark date of this Decision. A person who has the right to seek judicial review may appeal this Decision to the Superior Court pursuant to M.G.L. c. 30A, §14(1). The complaint must be filed in the Court within thirty days of receipt of this Decision.



Laurie Burt  
Commissioner

## SERVICE LIST

In The Matter Of: AP Cambridge Partners II, LLC

Docket No. 2008-069

File No. JD07-2094  
Belmont/Cambridge

### Representative

### Party

Thomas B. Bracken, Esq.  
33 Mount Street  
Boston, MA 02108  
[Thomas.bracken@earthlink.net](mailto:Thomas.bracken@earthlink.net)

APPELLANTS  
Coalition to Preserve the Belmont  
Uplands

Michael A. Leon, Esq.  
Nutter McClennen & Fish LLP  
155 Seaport Boulevard  
Boston, MA 02210-2604  
[mleon@nutter.com](mailto:mleon@nutter.com)

APPLICANT  
AP Cambridge Partners

Samuel Bennett  
MassDEP –Office of General Counsel  
1 Winter Street  
Boston, MA 02108  
[Samuel.Bennett@state.ma.us](mailto:Samuel.Bennett@state.ma.us)

DEPARTMENT

Cc:  
Mary Trudeau  
Belmont Conservation Commission  
19 Moore Street  
Belmont, MA 02478  
[mtrudeau@town.belmont.ma.us](mailto:mtrudeau@town.belmont.ma.us)

CONCOM

Thomas G. Younger  
Town Administrator  
Town of Belmont  
455 Concord Avenue  
Belmont, MA 02478  
[tyounger@town.belmont.ma.us](mailto:tyounger@town.belmont.ma.us)

MUNICIPALITY

Robert W. Healy  
City Manager  
Cambridge City Hall  
795 Massachusetts Avenue  
Cambridge, MA 02139  
[Ccitymanager@cambridgema.gov](mailto:Ccitymanager@cambridgema.gov)

MUNICIPALITY

Date: June 22, 2009