



CITY OF CAMBRIDGE, MASSACHUSETTS

P L A N N I N G B O A R D

CITY HALL ANNEX, 344 BROADWAY, CAMBRIDGE, MA 02139

Date: September 6, 2011

Subject: Chestnut Hill Realty Zoning Petition

Recommendation: The Planning Board **does NOT recommend** adoption of the petition.

To the Honorable, the City Council,

On September 6, 2011, the Planning Board heard testimony from the petitioner and public on the refiled Chestnut Hill Realty Zoning Petition. The petition proposes creating a special permit provision to waive the normal dimensional and parking requirements of the Zoning Ordinance in order to allow the conversion of basement space in certain older multi-family residential buildings into new dwelling units.

Members of the Planning Board acknowledged that the petition, in its revised version, addresses some of the Planning Board's concerns with the prior version. However, the Board maintains its prior recommendation that the petition not be adopted in its current form. As previously recommended, if the City Council is supportive of the general concepts being proposed, the Board suggests that both the substance and the language of the proposed zoning undergo more thorough review and consideration by City staff and the Planning Board. The Board's prior recommendation is attached as an appendix.

The Board has the following comments regarding the proposed changes as they relate to the issues raised by Board members in the prior petition.

- **Flooding:** The proposed new requirements for all buildings to have fully separated sewer and stormwater lines, and for all basement units to have backflow preventers, are positive steps toward addressing the flooding concerns previously raised by the City Engineer. The Board received a supplemental memorandum from the City Engineer (attached) acknowledging the importance of protection from sewer system back-ups, and requesting that if some form of the proposed zoning is adopted, projects be reviewed by the Department of Public Works to determine what additional protections might be required in specific locations. However, the memorandum also raises concerns about the risks of overland flooding, which are more difficult to manage but can have very substantial impacts on basements, and reiterates that the effects of climate change may very likely result in an increasing number of basements becoming at risk of flooding over time.

- Affordability of Units: The new petition proposes to require that at least one unit per project be provided as affordable regardless of the number of units proposed. The effective result would be that projects adding 1-9 new units would provide one affordable unit, and projects adding 10 units (the maximum number under this proposed zoning) would provide two affordable units in accordance with the requirements of Section 11.200. Although this would guarantee that some affordable units be provided, it is still the case that the units would be basement-level studio or one-bedroom apartments without parking, which would not be serving a priority need for the City's affordable housing programs. Currently, the City's top priority is to provide larger units suitable for families with children.

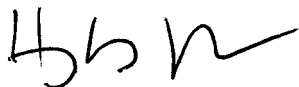
Board members reiterated specific concerns about the proposed waiver of required parking for the proposed units (which has not changed from the original petition) and general concerns about whether it is appropriate to provide zoning incentives to create basement units, which may not be of a quality comparable to other housing units in the city. Although the buildings cited as examples by the petitioner may generate lower parking demands and may provide adequate light, air, and security to basement units, other buildings may pose more risks or challenges. On the other hand, the proposed language would not allow projects to be approved without undergoing review through a special permit process. Potential issues could be addressed, at least in part, through application of the general special permit criteria (Section 10.43) or additional criteria specific to this provision.

Board members also reiterated concerns about the scope of the proposed regulations. If it is in the interest of the City to allow a waiver of base zoning regulations so that existing buildings may infill basements with apartment units, then it would stand to reason that the general provision could be applied more broadly, with specific criteria meant to directly address any anticipated impacts, and not limited to only a very small subset of buildings in Cambridge.

The construction of the proposed zoning language also raises concerns. In general, the Board finds that the wording of the proposed regulations is not consistent with the existing language of the Cambridge Zoning Ordinance. There are also specific inconsistencies within the substance of the regulations, for instance, the provision that buildings under "common management" or "taxed as one building by the Assessing Department" be considered one building is not consistent with the concept of a building as it is otherwise defined in the ordinance. Such inconsistencies may be problematic when applying the language to proposed projects.

If the City Council is supportive of the proposal, the Board recommends that City staff be directed to consider the proposed language and suggest changes to make the language more consistent with the definitions and other provisions set forth in the existing Zoning Ordinance, and that such revised language be reviewed by the Planning Board.

Respectfully submitted for the Planning Board,



Hugh Russell, Chair.



September 5, 2011

To: Brian Murphy,
Assistant City Manager for Community Development,

From: Owen O' Riordan PE
City Engineer

A handwritten signature in black ink, appearing to read "Owen O' Riordan".

Re: Basement Apartment Zoning Bylaw Amendment Re-Submittal

The Engineering Department at the Department of Public Works has reviewed the revised proposal submitted by Chestnut Hill Realty on July 26th 2011, specific to basement apartment construction in certain buildings throughout the City. We have also met with the proponents on two occasions since the original zoning amendment was submitted so as better illuminate our concerns specific to more widespread use of basements for housing throughout the City. During the course of our meetings the proponents have indicated that while certain of their properties in the city have had back-ups and flooding problems, those contained within this amendment have not been affected by such.

The Community Development Department has identified 51 parcels within the City that fall within the zoning defined with this amendment. Chestnut Hill Realty has listed 25 buildings where additional apartments could be built as a result of this amendment. A majority of the buildings identified by The Chestnut Hill Realty group exist in the area adjacent to Massachusetts Avenue between Harvard Square and Porter Square, closer to the Cambridge Common. The remaining buildings are, to the east of Harvard Square, in Mid Cambridge and between Harvard Square and Central Square. There are a few outliers beyond these areas, one on Kirkland Street, between Roberts Road and Throwbridge Street and the other on Green Street between Brookline Street and Sidney Street. (The Community Development Zoning petition map suggests that this area is outside that provided for in the amendment). The Parcels identified by CDD follow a similar scatter pattern, though with a greater number of outliers, one on York Street at Berkshire Street, one on Magazine Street and one on Franklin Street adjacent to Soden Street.

Those drainage issues that concern DPW, can be divided into two relative distinct types; sewer back-ups and overland flooding. Both manifest themselves due to capacity constraints in the municipal drainage system.

(a) Sewer system back-ups.

Back-ups result in sanitary services such as showers, sinks, toilets and washing machines having water flow backwards into these fixtures. The flow is generated from surcharged municipal systems or from other services in the building when flow cannot get out to the municipal system. As was stated in our previous letter, sanitary system back-ups can be mitigated using appropriate back flow prevention systems, augmenting the existing plumbing systems with domestic sanitary pumps etc .and requiring that buildings fully separate stormwater, sanitary flow and indeed groundwater.

(b) Overland Flooding.

Overland flooding occurs when water that cannot get into the municipal drainage system flows from the roadway over curbs and sidewalks into local depressions, through doors, windows and other openings into cellars and basements. Overland flooding is much more challenging from a damage protection perspective. While the City has made significant progress in reducing flooding in many of those areas of the City that are most prone to such, overland flooding continues to represent a risk where; the probability of impact, while reduced remains significant and the impact associated with such can be devastating for the people who own or live in those spaces effected.

The City has detailed knowledge of most of our drainage and sewer systems and possesses and operates a superior hydraulic modeling system that allows simulations to be made of significant rainfall events and their impact. However, it is impossible for us to state with certainty the level of protection afforded to all homes or dwellings throughout the City. What can be said however is : that as a result of past history, field investigations, detailed surveys and modeling efforts we have a much greater appreciation of those locations that are most prone to flooding. We can further state that by living in below grade properties in or adjacent to those areas that are subject to flooding the risk associated with such increases significantly. In examining those locations identified by both the Community Development Department and Chestnut Hill Realty a number of properties are located in areas that are more vulnerable to overland flooding. Properties along Green Street and Franklin Street in the Central Square area and properties on Kirkland Street adjacent to Roberts Road are more vulnerable to overland flooding.

While we remain concerned as to the impact of the petition, we are pleased to note that two of the recommendations included in our letter of March 28th have been included in the revised amendment proposal. We would request that, in the instance where the petition will likely be approved that the Department of Public Works be afforded the opportunity to review the drainage and sewer system particulars associated with projects proposing basement apartments and that DPW be entitled to require additional measures so as to further protect the below grade residential spaces from sewer system back-ups.

Finally in reviewing proposals to increase the number of below grade housing units throughout the City, it is important to recognize that as the City begins to look at climate change and adaptation planning, many basement units will, in all probability, be identified as high risk dwelling spaces from the perspective of adverse impact. Sea level rise and more intense storm events will give generate more

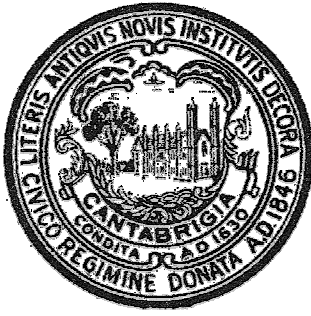
arterial and street flooding. As developers, engineers and planners look at climate change adaptation, there is increased emphasis of placing living units , mechanical, electrical and communication systems above grade and ensuring that buildings and those who dwell within them can sustain through more challenging climatic events.

If you have any questions concerning this letter, please contact me at 617) 349 4845.

cc: Robert W. Healy, City Manager

Richard C. Rossi, Deputy City Manager

Lisa Peterson, Commissioner of Public Works



CITY OF CAMBRIDGE, MASSACHUSETTS

PLANNING BOARD

CITY HALL ANNEX, 344 BROADWAY, CAMBRIDGE, MA 02139

Date: April 26, 2011

Subject: Chestnut Hill Realty Zoning Petition

Recommendation: The Planning Board **does NOT recommend** adoption of the petition.

To the Honorable, the City Council,

After consideration of the petition and testimony given at the public hearing on March 29, 2011, the Planning Board recommends that the Council not adopt the petition to amend the Zoning Ordinance to allow, by special permit, the creation of basement dwelling units in older multi-family residential buildings meeting certain criteria. Members of the Planning Board raised a variety of concerns in regard to the proposed zoning, as summarized below.

- Flooding: The Board received a compelling memorandum from the City Engineer describing the real hazards of flooding and sewer system backups within basements throughout the city. Without significant safeguards in place, many of which would be financially difficult or infeasible, adding more basement apartments in the city would put more tenants at risk of serious property damage and health hazards. In addition, the effects of climate change on a local scale (*e.g.*, increased number and intensity of storms) and a global scale (*e.g.*, sea level rise) may cause the risk of major flooding events to increase over time.
- Parking: Under the proposed zoning, new dwelling units would be allowed without the accessory parking that would ordinarily be required for new units. While it is reasonable to think that the allowed basement units would create less parking demand than other types of units, it is unrealistic to assume that there would be no parking demand at all. Such units would be allowed in areas where there is already a strong demand for on-street parking but a limited supply, therefore making it problematic to consider allowing additional units with no off-street parking.
- Quality of Units: Although it is possible in some circumstances for basement-level units to be built to a quality similar to other units in the city, there are general issues that might become troublesome if a large number of new basement-level units are developed. These include providing adequate light, air, and security, and managing the impacts of mechanical systems and utilities that would be required for the building. Board members were also concerned about establishing a precedent for a “lower class” of housing units.

- Affordability of Units: The buildings affected by the petition are not currently subject to Inclusionary Housing requirements because they predate the ordinance. The new units would only be “affordable” to the extent that there might be a lesser market demand for those units, which would likely result in only a modest reduction in price. Permanently affordable units, as defined in the Zoning Ordinance, would only be provided if ten new units were created in one building (although at the public hearing, the petitioner suggested that the language could be changed to also require one affordable unit in a development of at least five units). Moreover, the proposed one-bedroom and studio rental units would be intended to be occupied by one or two people over a relatively short period of time. Affordable units, as defined in the Zoning Ordinance and managed by the Community Development Department, tend to have longer-term occupancy by larger families. The proposed basement units would not be suitable for these families.
- Planning Rationale: The petition establishes a very limited set of circumstances under which zoning provisions would be waived to allow for new basement units. After hearing testimony from other property owners at the public hearing, Board members felt that there may not be a compelling planning rationale for including buildings that only meet the specified criteria while excluding other existing buildings, such as smaller apartment buildings, buildings in other districts with access to transit service, and buildings with habitable basements that do not include pre-existing units. There may be a practical purpose for including limitations on the provision, in order to better manage the potential impacts. However, if the limitations are viewed as arbitrary, then reason would dictate that the provision should be expanded to include other properties. If the provision were thus expanded, the issues raised above would be exacerbated because more units could potentially be created citywide.

Several Board members did note some positive aspects of the petition. At least some of the buildings affected by this petition have ample space available in their basements that could be suitable locations for dwelling units. Allowing such units may be consistent with the city’s goal of expanding the housing supply while limiting the impacts of new construction. Some Board members saw an advantage to allowing a variety of different unit types – including basement and attic units – in order to serve segments of the Cambridge population that might benefit from those housing options.

In light of the number and significance of issues and concerns raised above, the Board does not make a favorable recommendation to the Council on this petition. Further study would be required to sufficiently address the issues that have been raised, including an analysis of the impacts of such a provision if it were applied to a wider range of buildings and districts.

Respectfully submitted for the Planning Board,



Hugh Russell, Chair



March 28, 2011

To: Brian Murphy,
Assistant City Manager for Community Development,

From: Owen O' Riordan PE
City Engineer

A handwritten signature in black ink, appearing to read "Owen O' Riordan".

Re: Zoning Ordinance to permit the creation of basement apartment housing.

The Engineering Department at the Department of Public Works is concerned about the proposed change in zoning specific to more widespread use of basements for housing in the City. Our concerns are primarily associated with drainage and sewer service to below grade properties.

Certain neighborhoods in the City are prone to poor drainage. Poor drainage manifests itself in sanitary sewer backups and flooding. This is primarily due to low topography in relation to the receiving waters and conveyance constraints related to the municipal and regional drainage facilities. Flood prone areas include the Agassiz neighborhood, the Area four neighborhood, Harvard Square, parts of Cambridgeport and neighborhoods near the Alewife Brook. In all instances, during intense rainfall events both the sanitary systems and the wet weather drainage systems are unable to convey rainfall away as quickly as it is falling, thus streets flood, water overtops street curbs and drains into adjacent basements and below grade facilities. The City continues to work to improve flood protection in these neighborhoods, by constructing underground stormwater storage systems, building larger conveyance systems to the receiving waters or building pump stations so as to better move the water away from those low lying areas. These projects are extremely costly, extremely disruptive and are limited in the extent to which they can improve flood protection.

The Department of Public Works received in excess of 200 calls on July 10th 2010 from residents and businesses where back ups and flooding caused significant damage to properties throughout the city. That flooding was the result of an extreme rainstorm of 3 plus inches of rain in one hour. Effected parties reported damage between \$5,000 and \$60,000 as a result of that storm. Below grade apartment owners on Green Street and Sidney Street had to vacate their rented accommodation while the units were fully reconditioned and concerns specific to the electrical systems and mold generation were dealt

with. Significant street and private property flooding was experienced in the Area four neighborhood, the Agassiz neighborhood, The Wellington Harrington Neighborhood, Cambridgeport and Harvard Square. The majority of the damage was caused by back-ups into basements but there were also widespread instances of overland flooding resulting in extensive damage to basement homes and businesses.

In March 2010 in excess of 10 inches of rain fell in a 36 hour period in the city. In this instance properties adjacent to and within the Alewife watershed were profoundly impacted by overland flooding and backups. Again homeowners who had valuables and utilities in basements were severely impacted. They lost power and gas supply for a number of days and required municipal services to respond to their various emergency needs. Fire Department crews were on standby in the neighborhoods. DPW used municipal pumps to pump out the most severely impacted homes and extended curb side collections for all of the various items that had to be disposed of subsequent to the water receding. In the majority of instances on both occasions, those who lived in these dwellings had no flood insurance to cover the damages.

The majority of the City's drainage and sewer systems are combined. This circumstance serves to exacerbate the issue. During rainfall events both stormwater and sanitary waste are discharged to the same pipe. Because of both local and regional capacity constraints these systems are subject to frequent surcharging, i.e. instances where the pipe systems are full and water is thence flowing under pressure. When sewer systems surcharge below grade facilities; basement bathrooms, showers, sink units etc, are subject to backups and subsequent flooding and the various public health issues that can result from sanitary waste and stormwater discharging to one's home.

In uninhabited basements where laundry facilities are frequently located, a reasonable solution to such is a properly located back flow prevention device. This device is not entirely sufficient, but in most instances provides adequate protection. When basements are inhabited however, this circumstance generates more significant constraints. Rain events will necessitate great caution with regard to the use of showers, bathrooms, washing machines etc., unless sanitary pump facilities are employed, as a surcharged municipal sewer system will challenge the ability of a basement plumbing facility to drain by gravity.

Today, parts of the north west of the City are impacted by arterial flooding when the Alewife Brook leaves its banks and floods those homes and businesses adjacent to the Alewife Brook Parkway and Massachusetts Avenue. Heretofore, arterial flooding has not occurred as a result of the Charles River overtopping its banks. It is expected that during the course of the City's climate change adaptation planning, sea surge impacts will be further studied so as to understand the extent to which such catastrophic events could impact the City. Initial event simulations suggest widespread Charles River arterial overland flooding throughout most of The City and suggest that below grade property owners and properties will be those most seriously at risk.

In reviewing the zoning petition, and notwithstanding that which has already been stated, if the petition is approved, the following is recommended;

- (a) Basement units must be serviced by a separate sewer service i.e. separate from that which serves the above grade property and that service extend to the municipal main.
- (b) Back flow preventers must be properly installed by a licensed plumber in appropriate locations.
- (c) Full sewer separation of the above grade building should be required so as to further mitigate the impact of surcharging on the municipal sewer main.
- (d) Finally, in properties where significant basement development is proposed it may be necessary to have pumped sewer systems installed as well as separate sewer services.

The Department of Public Works cannot guarantee reliable gravity sewer service to basement apartments or housing units.

If you have any further questions, please don't hesitate to contact me at (617) 349-4845.

cc: Robert Healy, City Manager
Richard Rossi, Deputy City Manager,
Lisa Peterson, Commissioner of Public Works.