February 18, 2011

Addendum to Commonwealth of Massachusetts January 31, 2011 Revised CMS Comments:
Explanation of the Housatonic Floodplain Remediation & Core Habitat Areas Map

In our January 31, 2011 comment letter on the revised CMS, the Commonwealth noted that EPA has established a range of human health risk limits to guide the remedy selection. We stated that we support remediation to meet EPA's human health cancer risk limit of 10^{-4} and non-cancer risk limit equal to a hazard index of 1, and further remediation to add a layer of protection when it can be done without causing significant environmental damage. Consistent with these principles, the Commonwealth's proposed remedy calls for no bank or river excavation and stabilization because the cancer risk limit and non-cancer risk limit is already met in these areas and to require further remediation will cause irreversible damage to the meandering character of the Housatonic River ecosystem and to the associated state-listed species and their habitats. Our comment letter explained that within the floodplain, the Commonwealth has identified "core habitat areas" of special ecological character and value that are not necessary to excavate to protect human health. Instead, the risk to human health in these areas can be addressed through the implementation of institutional controls ("ICs"). The Commonwealth stated that it would submit a map of these floodplain remediation and core habitat areas as an addendum to its comment letter. Below is an explanation of this map entitled *"Housatonic Floodplain Remediation & Core Habitat Areas."*

As summarized above, the remediation goal underlying the map is predicated on meeting human health standards that are appropriate for the floodplain, the great majority of which is permanently protected by the Commonwealth as open space. Consistent with this approach, the Commonwealth analyzed the habitat impacts associated with floodplain remediation, and in particular the feasibility of conducting additional remediation without causing undo harm to state-listed species and other important habitat features such as vernal pools.

To complete this analysis for this map, we identified core habitat areas based on three criteria:

1. Core habitat areas for nine state-listed species occupying the floodplain. These species were selected based upon their reliance on floodplain habitat, sensitivity to habitat disturbance and the degree of difficulty associated with restoring their habitat after remediation.

2. Vernal pools, and the 100-foot supporting terrestrial habitat zone surrounding each pool.

3. Areas with a high richness of co-occurring state-listed species (i.e., areas providing habitat for nine or more listed species).

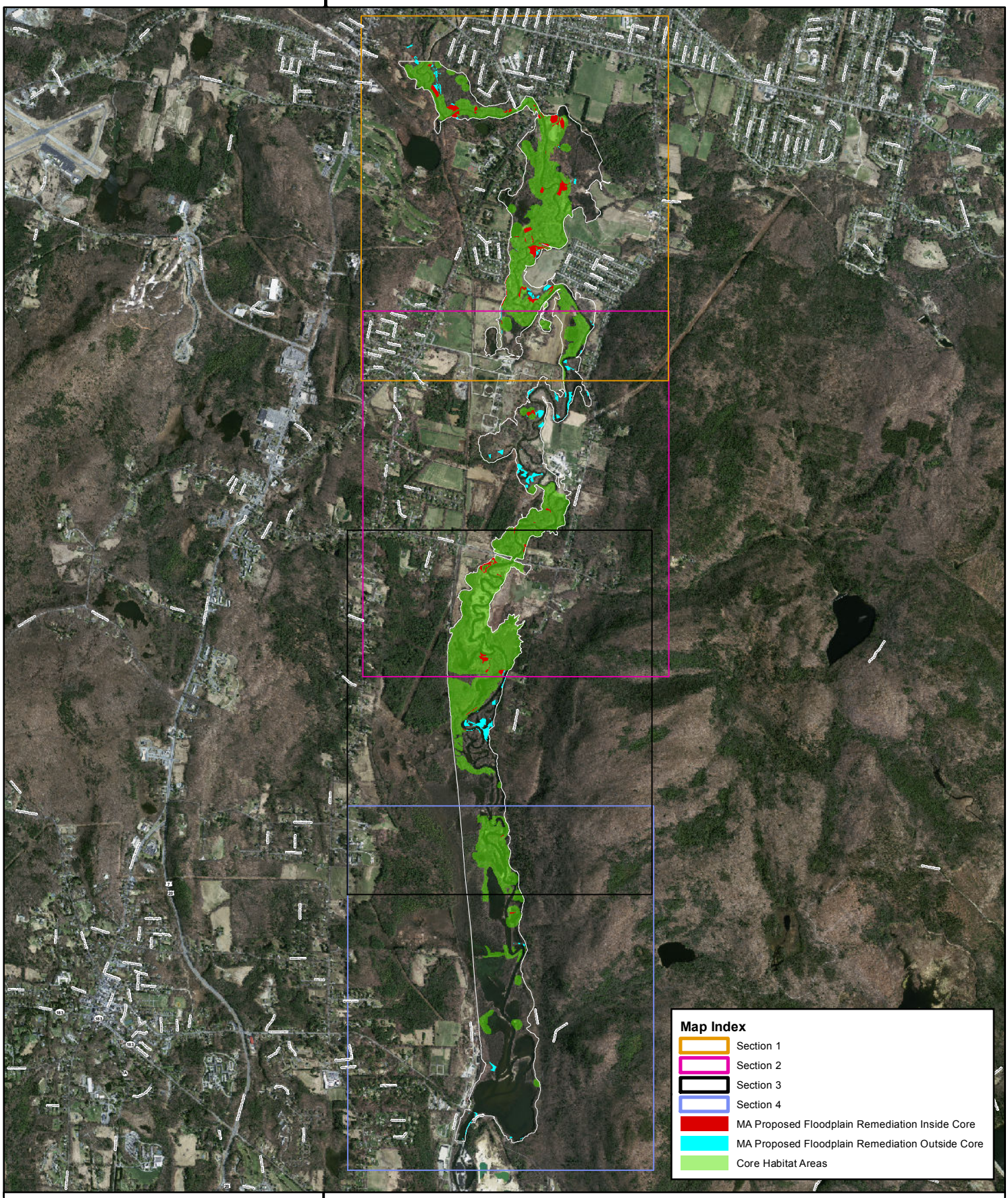
We then overlaid remediation areas identified to achieve human health risk standards over these core habitat areas. Areas designated for remediation that fell outside the core habitat

areas were retained and yielded 18.5 acres. The Commonwealth proposes all of these areas for remediation, with the exception of very small polygons that consist of several very small, remote areas where the disturbance associated with accessing these areas does not justify remediation.

Within the core habitat areas, we identified 10.1 acres that must be remediated to meet human health risk standards. The commonwealth proposes that a 2.2 acre area of floodplain forest providing very important habitat for a sensitive state-listed species (Ostrich Fern Borer) within these 10.1 acres not be remediated. Because remediating this forest patch would eliminate virtually all of the known habitat for the local subpopulation of this species, and because this forest habitat cannot be easily restored in the short or medium term, the Commonwealth recommends managing human exposure to this area through ICs. Because the area is relatively small, wet and difficult to access, institutional controls such as signage are likely to be sufficient. Through these first two steps we identified 26.2 acres for remediation and an additional 2.2 acres to be addressed through ICs appropriate for that site.

The third step in our analysis involved identifying additional areas within core habitat that could be remediated while minimizing impacts to key habitat features. In general, this involved proposing for remediation those areas that were in close proximity to areas designated for remediation under the first two steps, and thereby minimizing the need to construct roads and staging areas, and consolidating the areas of disturbance to minimize habitat fragmentation. Potential remediation areas in close proximity to roads and development were also selected. This resulted in the identification of an additional 7.2 acres of potential floodplain remediation, resulting in a total proposed floodplain remediation area of 33.4 acres. Finally, as road and staging area layouts are refined during the remedy design phase, it may be appropriate to consider managing some of these 33.4 acres through ICs—especially relatively small remediation areas, in remote, difficult to access areas. In general, consistent with our January 31, 2011 comment letter, even in these 33.4 acres, we view excavation as a last resort, to be performed if institutional controls and site-wide averaging are not sufficient.

Housatonic Floodplain Remediation & Core Habitat Areas



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Index Map for Study Area Maps

N

0 0.45 0.9 1.8 Miles

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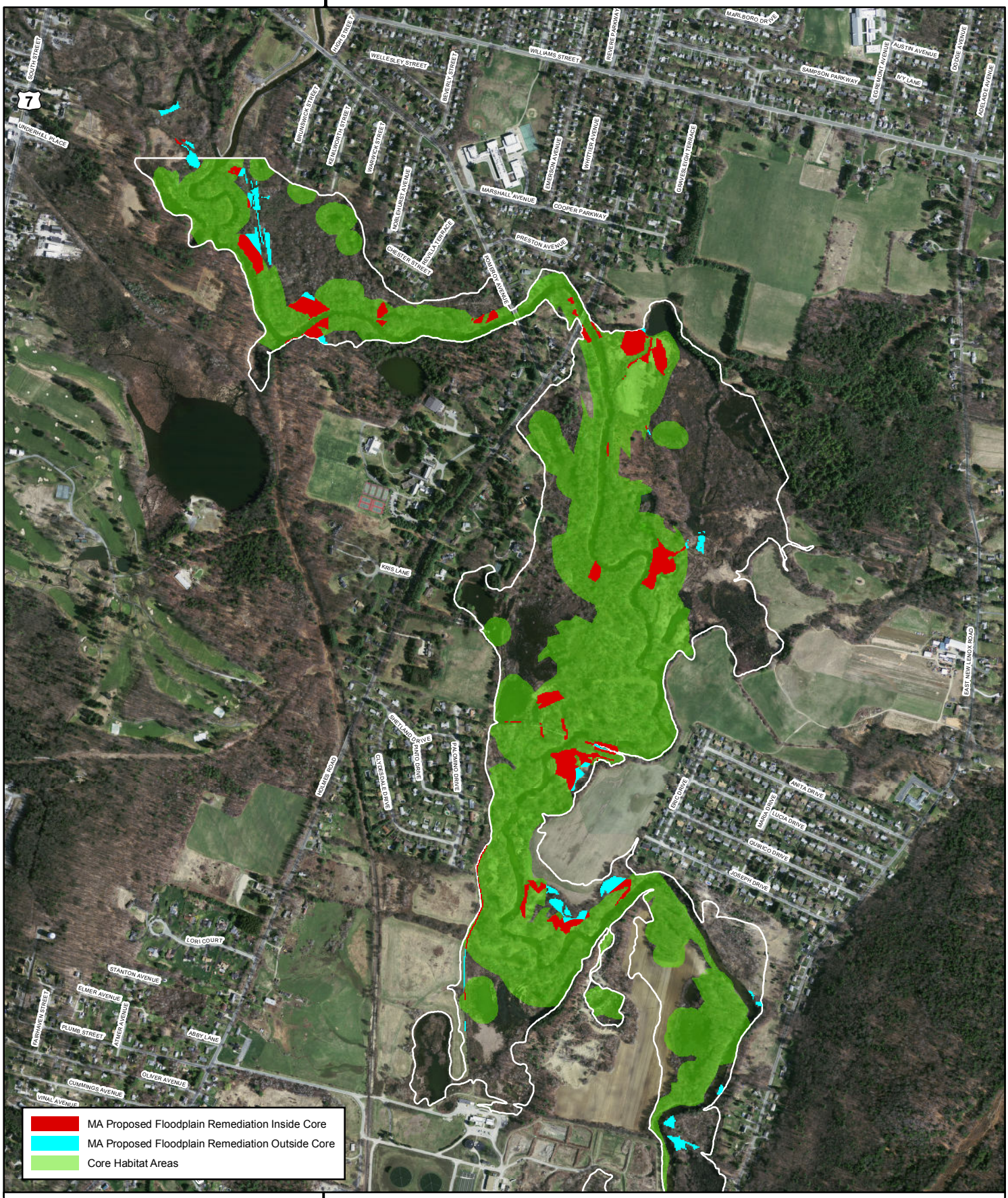
Housatonic Floodplain Remediation & Core Habitat Areas



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Study Area - Section 1 (of 4)

0 0.125 0.25 0.5 Miles

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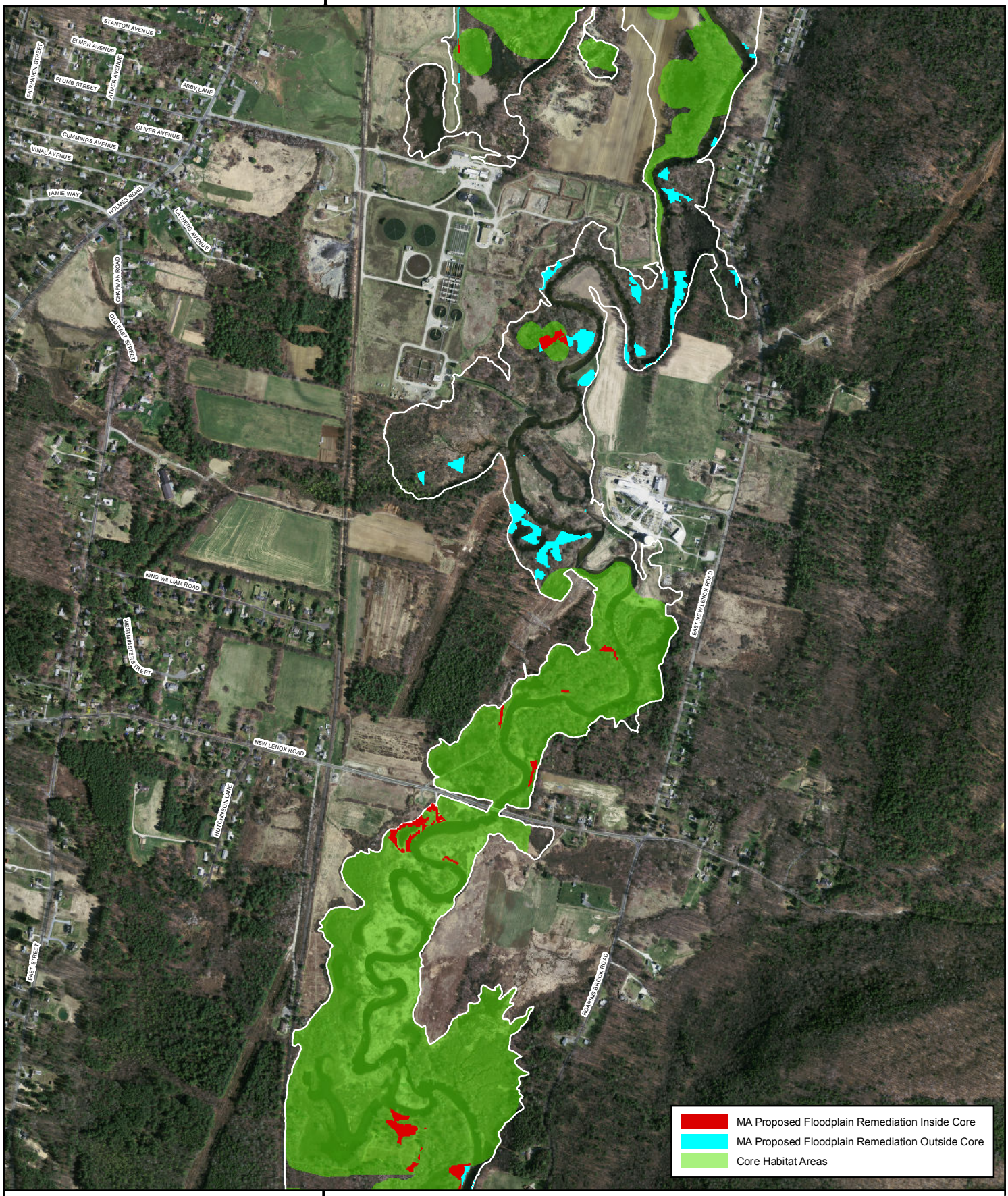
Housatonic Floodplain Remediation & Core Habitat Areas



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Study Area - Section 2 (of 4)

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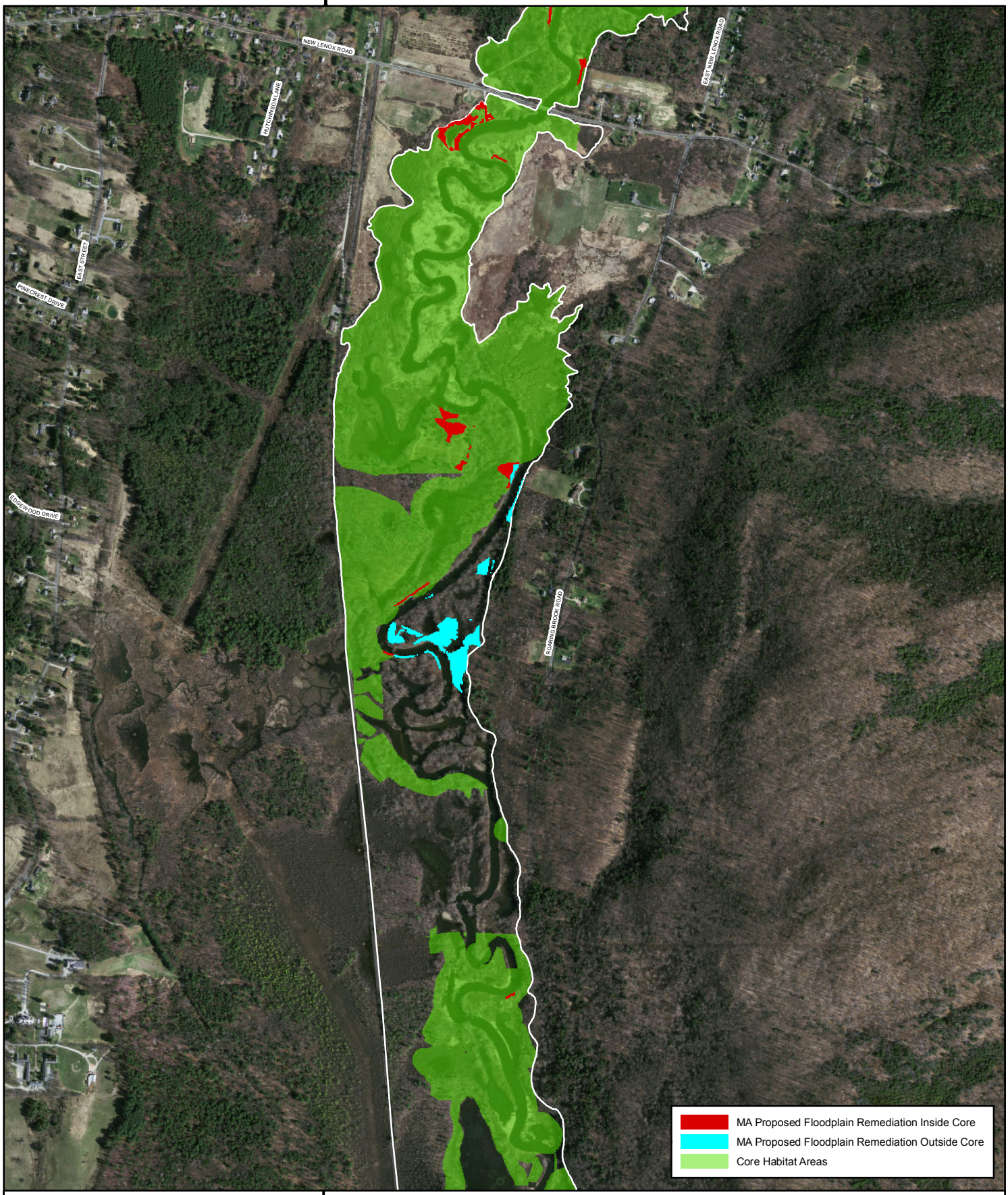
Housatonic Floodplain Remediation & Core Habitat Areas



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Study Area - Section 3 (of 4)

N

0 0.125 0.25 0.5 Miles

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Housatonic Floodplain Remediation & Core Habitat Areas

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Study Area - Section 4 (of 4)

0 0.125 0.25 0.5 Miles

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