

## Vang, Mai (CI-StPaul)

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**To:** Moermond, Marcia (CI-StPaul)  
**Subject:** RE: Retaining Wall Question

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**From:** Karpen, Brian (CI-StPaul)  
**Sent:** Monday, July 11, 2016 12:21 PM  
**To:** Moermond, Marcia (CI-StPaul)  
**Subject:** RE: Retaining Wall Question

Marcia:

I was able to get out to Hudson Rd this morning and take a look at the retaining wall in question as you requested. As I'm sure you are aware there is a small retaining wall that runs the width of the property on the north side of 861 Hudson Rd. and to the south of 726 Plum St. The Hudson Rd. property being the lower property. I'd estimate that for the entire length of the wall it is less than 3'. There is a portion of the wall to the east of the garage that has collapsed completely. The remainder of the wall is significantly out of plumb and could be termed a structural failure though the wall is still in place. Above the collapsed portion of the wall is the garage for the 726 Plum property and below is a paved parking or patio area. The remaining length of wall runs behind the garage of the 861 Hudson property. Above this portion of the wall is the house for 726 Plum. There is also a fence located near the top of the retaining wall.

Addressing the collapsed portion of the wall. There is likely little danger to the garage above on the Plum St. property. Only one corner approaches near to the, now exposed, slope behind the wall and it is located a few feet back of what was the top of the wall. If the exposed soil slope did further erode it would likely reach a natural slope before the garage was underpinned. There is little slope to the yard of the upper property which will mitigate any water runoff and slow erosion of this area.

The remaining length of the wall which is deflecting out of plumb will have no effect on the house above at 726 Plum. The basement and foundation likely extends well below the base of this all and is located well back so the wall is unaffected by foundation surcharge and the foundation is unaffected by the wall. The danger in this area is that the wall will further collapse and damage the rear of the garage at 861 Hudson.

I believe you mentioned that the wall is on the property of 861 Hudson. Though it is hard to predict timing of a "full" collapse I would estimate that there is no real danger to people. Further the danger to structures in the area is minor and limited to the garage at 861 Hudson. As long as the property owner is aware of the risk to further damage to this garage extending the repair timeline should not be an issue. If further collapse does occur there may also be damage to the fence above that would likely need to be replaced as well.

In situations like this with property lines and tight areas reconstruction and repair is difficult. I would suggest the easiest solution is to remove the wall and rubble and replace it with a "dry stack" landscaping block retaining wall. This is likely cheapest and easiest to do as it does not require much of a foundation. The estimates that you have forwarded to me appear to reflect this solution. It is my understanding that HPC may not be happy with this approach. Replacing this wall with a historically accurate masonry wall may be difficult. A foundation would need to be provided and construction of this in the tight confines behind the garage will be difficult and add much expense. It may be possible to remove the wall and regrade this slope to eliminate the need of the wall. A grade would need to be such to allow vegetation to grow, which I believe is typically a slope of 1 to 1, though I am not an expert in this. This solution will likely impact both properties and necessitate removal and replacement of the fence. Taking all factors into consideration this may not be any less expensive than the "dry stack" block wall.

I hope this assessment helps with your process. Please let me know if you have any questions or need further clarification.

**Brian Karpen, PE**  
*Structural Engineer*

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**From:** Moermond, Marcia (CI-StPaul)  
**Sent:** Friday, July 08, 2016 10:40 AM  
**To:** Karpen, Brian (CI-StPaul)  
**Subject:** Retaining Wall Question

Thanks for agreeing to look at these Brian. As mentioned, the question is whether the retaining wall is necessary. If so, can it be pared down? Talk to you soon, Marcia

861 Hudson Rd.

<https://stpaul.legistar.com/LegislationDetail.aspx?ID=2692809&GUID=161F4118-B84C-4FEA-9DA0-8B576CCB24BF>

726 Plum St.

<https://stpaul.legistar.com/LegislationDetail.aspx?ID=2689474&GUID=2511AADF-4333-4EA5-AABA-794D1AF75223>