



Report to: General Committee

Meeting Date: Oct. 31, 2016

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**SUBJECT:** German Mills Meadow and Natural Habitat – Additional Maintenance near north-west side of the Meadow along the property line

**PREPARED BY:** Robert Penner, ext 4550  
Prathapan Kumar, ext 2989

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**RECOMMENDATION:**

- 1) THAT the report entitled “German Mills Meadow and Natural Habitat – Additional Maintenance near north-west side of the Meadow along the property line” be received;
- 2) AND THAT the Council endorse staff recommendation to continue current maintenance activities for the German Mills Meadows;
- 3) That Staff be authorized and directed to do all things necessary to give effect to this resolution.

**EXECUTIVE SUMMARY:**

N/A

**PURPOSE:**

The purpose of this report is to respond to a report presented by the German Mills Meadow and Natural Habitat Liaison Committee to Council on Apr 18, 2016 (Attachment “A”).

**BACKGROUND:**

The former Sabiston Landfill site / German Mills Meadow and Natural Habitat is located south of John Street, west of Don Mills Road and north of the Leslie Street extension at Steeles Avenue. The site includes a closed landfill area (See Attachment B).

The City is responsible for the management of the site in accordance with the requirements prescribed by the Ministry of the Environment and Climate Change (MOECC) until the methane gas that is produced as the waste within the landfill decomposes, is fully eliminated. This work includes regular monitoring of methane levels at the Meadow boundary with adjoining private properties as well as monitoring groundwater and the surface water of German Mills Creek.

As part of the overall management of the site, staff provides information and updates on activities carried out at the site to the German Mills Meadow and Natural Habitat Liaison Committee. The Committee has been established to provide communication linkage on environmental issues or alerts related to the management of the former landfill site. The Committee may pass a motion requesting Council’s action if they wish to have the City undertake initiatives at the Meadow.

At the April 7, 2016 German Mills Meadow and Natural Habitat Liaison Committee meeting a report was tabled by the Committee members entitled “Report to Markham Council from the Community Liaison Committee Regarding Some Necessary Maintenance at The Meadow” (Attachment “A”). On April 18, 2016, General Committee recommended that this report be referred to staff and report back.

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City's Monitoring/ Maintenance Program:

Markham actively maintains the former Sabiston landfill within the City's property boundaries by providing on-going monitoring, evaluating impacts, remediating and addressing issues when necessary. The City's program includes monitoring of the settlement along the property lines twice a year and a review of the fences surrounding the property to ensure no adjoining residents are put at risk.

Settlement on both sides of the property line is occurring as the waste below the surface (on the private and public side) naturally compresses over time. It is acknowledged that this landfill will continue to settle for decades until all of the waste has been decomposed.

With respect to settlement concerns, the City has adopted the best practice approach to allow the land to settle naturally. It is not the City's objective to maintain the grades at any particular level on the landfill site or at the perimeter; however, the City's maintenance practice is to ensure positive flow of water/ run off and no ponding areas within the City's property. If a run-off or ponding issue is identified, the City will address them by providing clean fill in those specific areas. In addition, the City is responsible for the maintenance of the chain-link boundary fence ensuring its stability and safety.

Private Property Owner Responsibility:

On the private owner's side of the property line, it is the owner's responsibility to address settlement concerns. The City does not have a legal obligation as an adjacent owner to prevent the natural subsidence of residential lots resulting from the subsidence of the landfill which underlies the residential properties. A landowner is not responsible for the adverse effects of settlement on abutting properties unless the owner has done something to initiate or exacerbate the settlement. The City acquired the site after the landfill had closed and the City has done nothing to exacerbate the natural settlement of the site.

**OPTIONS/ DISCUSSION:**

The "Report to Markham Council from the Community Liaison Committee Regarding Some Necessary Maintenance at The Meadow" recommends additional maintenance work for three "highly interlinked items":

1. Stabilize the subsidence around the perimeter of The Meadow;
2. Repair some small sections of the boundary fence; and
3. Undertake minor contouring of the terrain near the perimeter, to enhance drainage and eradicate stagnant ponding, and to eliminate some hazardous depressions in the ground.

In addition, the report indicated:

"The ground on the homeowners' side of the property line has also sunk. This may be partially due to subsidence. However, the ground tilts downward from the homeowners' side of the property line into the Meadow. The sinking of ground on the Markham side is therefore causing the earth on the homeowners' side to slump across the property line. This significantly exacerbates the homeowners' problems. It is ruining gardens and gazebo structures, cracking patios, and jeopardizing swimming pools."

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Evaluation of Recommendation #1:

Asset Management staff retained AMEC Foster Wheeler Environment & Infrastructure (AMEC) to evaluate Recommendation #1: “Stabilize the subsidence around the perimeter of The Meadow”.

AMEC, after a review of survey records and visual observations of the site, provided the following observations:

- (1) The ground along the northern and western boundaries of the site has settled forming localized steep slopes up to approximately 600 mm (24 inches) along the fences of the adjacent properties on both the Meadow side and on the home owners side;
- (2) The ground surface within approximately 10 metres from the northern and western boundaries of the site, in general slopes down from the fences toward the center of the site with a grade differential exceeding approximately 2 metres at some locations;
- (3) Ten (10) properties on Dawn Hill Trail and three (3) properties on Pine Knoll Gate are experiencing the back yard settlement issue (Attachment “C”)
- (4) Additional fill material will contribute to an increase in future settlements beyond the on-going long-term consolidation process of the landfill material. The fill and topsoil will be 2 meters deep at the deepest point.

Attachment “D” shows the typical cross section of the land, with the land sloping towards the middle of the Meadow. In order to raise the ground level at the property line, overall grading of the land is required and fill will need to be placed on both the City and the resident’s sides. It is not feasible to only fill one side when the other side is also low in elevation. If the direction is to proceed with fill, the implication for the City would include the following works to be carried out, on the City’s property, at an estimated cost of \$276,500:

- Backfill with clean fill to construct a 2 metre wide flat bench (land) at the fence line and a 4:1 slope downwards towards the centre of the Meadow (Attachment “D”) at an estimated cost of \$221,000.
- Removal of approx. 52 trees and 22 shrubs (to provide access for trucks to deposit the fill and room for soil leveling operations) and tree replanting at an estimated cost of \$55,500. The existing trees would not survive after the fill is deposited around them.
- Topsoil + seed mix appropriately selected for this environment
- All work needs to be carried out outside of the bird nesting season (Sept 15<sup>th</sup> – April 1<sup>st</sup>)

Further, the area where the fill will be placed contains part of the gas collection system. This section of gas collection system is currently working without any issues and is scheduled to be replaced in the next 4-6 years (pending confirmation from regular condition inspections) and the replacement/repair cost has been included in the City’s 25 Year Lifecycle reserve. The estimated cost of replacing the gas collection system is approximately \$355,000. If the City chooses to raise the ground levels within the Meadow at the property line (on the City’s side of the property), then accelerating the replacement of the existing gas collection system program should be considered in order to complete the repairs prior to completing the fill works. Therefore, total cost for the work would be \$631,500 and the fill and leveling work would need to be continued every 3 to 5 years at additional costs.

If the direction is to proceed with filling on the City’s property, Staff does not support the City carrying out work within private properties, to raise the grade on the resident side, due to the

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potential liabilities that may occur. However, staff has no objection if the homeowners directly negotiate with the City's contractor, independent of any arrangement between the contractor and the City, to provide fill within the private property.

Staff recommends continuation of the best practice approach to allow the land to settle naturally, and do not recommend elevating the grades along the property line at this time due to the following reasons:

- (a) It is acknowledged that this landfill will continue to settle for decades until all of the garbage has been decomposed.
- (b) Raising the grade at property line will be an activity that is expected to be repeated as the landfill settles.
- (c) Additional fill material will contribute to an increase in future settlements beyond the on-going long-term consolidation process of the landfill material.
- (d) The grade can only be elevated if all affected properties also raise their elevation on the private side to stabilize the grade.
- (e) Adding fill at this time does not coincide with the future repairs of the gas collection system.
- (f) All trees/shrubs currently providing a buffer between residents and the Meadow will need to be removed.

**Recommendation #2 & 3:**

As part of the regular maintenance program, City monitors the boundary fencing and ensures positive flow of water/ run off and no ponding areas within the City's property. If issues are found, City will make repair to the boundary fence ensuring its stability and safety (Recommendation #2), and undertake minor contouring of the terrain including filling low lying areas and grading hazardous ground depressions near the boundary (Recommendation #3).

**FINANCIAL CONSIDERATIONS**

Not Applicable

**HUMAN RESOURCES CONSIDERATIONS**

Not Applicable

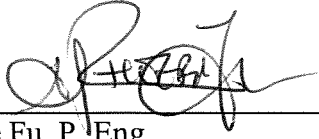
**ALIGNMENT WITH STRATEGIC PRIORITIES:**

Management of the German Mills Meadow and Natural Habitat addresses environmental concerns and aligns with the City's strategic priorities.

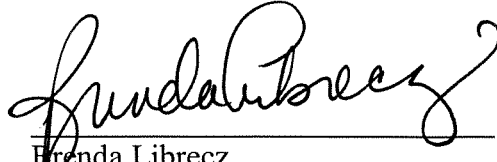
**BUSINESS UNITS CONSULTED AND AFFECTED:**

The Legal Department has reviewed this report and their comment has been incorporated.

**RECOMMENDED BY:**



Phoebe Fu, P. Eng.  
Director, Asset Management



Brenda Librecz  
Commissioner, Community & Fire Services

**ATTACHMENTS:**

- Attachment "A" - Report to Markham Council from the Community Liaison Committee  
Regarding Some Necessary Maintenance at the Meadow
- Attachment "B" - German Mills Meadow and Natural Habitat - Location Map
- Attachment "C" - Properties Experiencing Back Yard Settlement
- Attachment "D" - Existing Cross Section and Raised Grade Scenario at the Property Line

## **German Mills Meadow and Natural Habitat**

### **Report to Markham Council from the Community Liaison Committee**

#### **Regarding Some Necessary Maintenance at The Meadow**

#### **1. Recommendation**

The Community Liaison Committee strongly recommends that Markham Council approve some additional maintenance work in the German Mills Meadow and Natural Habitat. The work is for three highly-interlinked items:

- a) Stabilize the subsidence around the perimeter of The Meadow;
- b) Repair some small sections of the boundary fence; and,
- c) Undertake minor contouring of the terrain near the perimeter, to enhance drainage and eradicate stagnant ponding, and to eliminate some hazardous depressions in the ground.

This is not a major project, the work is restricted to a relatively small area at the north-west corner of The Meadow.

In addition, we encourage cooperation with adjoining homeowners, who may wish to purchase fill for their side of the property line. There are great efficiencies for both Markham and the homeowners in having the fill delivered at the same time.

#### **2. Scope of the Report**

The Community Liaison Committee (hereafter, 'The Committee') is fully cognizant of all on-going care and maintenance activities in The German Mills Meadow and Natural Habitat (The Meadow). The Committee supports activities such as the monitoring of methane. It actively participates in other activities, such as the recent improvement of the signage in The Meadow. These kind of activities should all continue. The rest of this report will, however, be restricted to discussing the recommendations in Section 1.

#### **3. The Meadow is a Unique Natural Habitat**

The Committee is dedicated to preserving The Meadow's unique natural habitat. It therefore proposes that the work be conducted out of the bird-breeding season, so that any noise (*e.g.* from trucks delivering fill) would not disturb birds or other wildlife. The work already undertaken has demonstrated trucks can reach the work location on a route that avoids damage to the terrain. If done at the right time of year, the proposed maintenance will not have any adverse environmental consequences.

The German Mills Meadow and Natural Habitat is a unique natural habitat and wildlife refuge. This, and its location over a former landfill site, make it unlike any other Markham property. The proposed maintenance is an expansion of work already done. It is addressing unique problems, and sets no precedence for work elsewhere.

#### **4. Basis of Recommendation**

##### **4.1 Monitoring of Subsidence**

The Meadow is owned by The City of Markham (Markham). It incorporates what was The Sabiston Landfill Site, and subsidence was therefore to be expected.

Ms Brenda Librecz, Commissioner of Community & Fire Services, has informed us that,

*'The City's program includes a bi-annually monitoring of the settlement along the property lines and a review of the fences surrounding the property'* (Reference 1).

The Committee was pleased to participate in the City's last inspection, which occurred on March 30, 2016. In addition to the official Markham monitoring, there have been many site visits and inspections by Markham staff, by Councillors, and by representatives of the Settlers Park Residents Association (SPRA).

All this monitoring has shown that, although the landfill site has been closed for four decades, subsidence of the land does continue to take place.

Although the subsidence is probably more widespread, the focus of the monitoring has been the north-west corner of The Meadow. This is where the subsidence is causing problems. The Committee's recommendation for maintenance work is restricted to this relatively small area.

##### **4.2 Problems as a Result of Subsidence**

There is significant subsidence on the Markham side of the property line and at other localized areas a little further into The Meadow.

The subsidence at the property line has caused two problems:

- Parts of the perimeter fence have sunk and/or tilted to a considerable angle from vertical. These parts of the fence need repair, and this requires fill to compensate for the subsidence that has taken place.
- The ground on the homeowners' side of the property line has also sunk. This may be partially due to subsidence. However, the ground tilts downward from the homeowners' side of the property line into The Meadow. The sinking of ground on the Markham side is therefore causing the earth on the homeowners' side to slump across the property line. This significantly exacerbates the homeowners' problems. It is ruining gardens and gazebo structures, cracking patios, and jeopardizing swimming pools.

The subsidence at localized spots further into The Meadow has also caused two problems:

- Water drainage is being impeded resulting in stagnant pools of water. These are a prime breeding site for mosquitoes, a particular problem if the West Nile virus becomes prevalent.
- There are patches of ground which contain concealed bumps and holes, and also an exposed pipe. These are hazardous for people walking in The Meadow. There may be a liability issue for Markham, if a member of the public suffered injury.

### **4.3 Maintenance Required**

Ms Brenda Librecz stated in Reference 1,

*'In addition, the City is responsible for the maintenance of the chain-link fence and our shared property line and has always been a good neighbour in ensuring its stability and safety.'*

Markham has already performed some remedial maintenance work under this program. The work, done in 2014, consisted of using clean fill to slightly change the contour of the land close to the perimeter. This work was well conceived, but unfortunately the quantity of fill available at the time was insufficient to have more than a fairly marginal impact on the total problem.

This report does not advocate anything new, but a continuation of the previous maintenance work, in accordance with Markham's current policy.

As noted in Section 1, the maintenance required is to:

- a) Stabilize the subsidence around the perimeter of The Meadow;
- b) Repair some small sections of the boundary fence; and,
- c) Undertake minor contouring of the terrain near the perimeter, to enhance drainage and eradicate stagnant ponding, and to eliminate some hazardous depressions in the ground.

This will entail bringing in some clean fill and making some modest re-contouring of the land close to the property line. This will help to stabilize the area on the Markham side of the line. Once the ground has been stabilized to the extent practical, the chain-link fence should be repaired.

The slight modification of the land contours, to avoid stagnant water and eliminate safety hazards, requires the same type of fill and equipment as stabilizing the property line. In the vicinity of Dawn Hill Trail, a smaller machine than was utilized in 2014 would facilitate access to the work area.

The Committee strongly advocates that the work be undertaken in the fall of 2016, after the bird-breeding season is over.

### **5. Co-operation with Neighbours**

It is impossible for homeowners living adjacent to the property line to stabilize their own gardens and/or backyards, until Markham stabilizes its side of the property line. Even then, it is logistically difficult for homeowners to get significant quantities of fill to the property line, since there is no truck access except over Markham property. The Committee opposes allowing homeowners' vehicles uncontrolled access through The Meadow. However, there would be substantial logistical advantages in having fill delivered to homeowners, at the same time as the Markham maintenance work is undertaken.

The number of homeowners involved would be small, and the administration of this matter would be simple. Homeowners could be offered the chance to buy fill from the contractor, and pay the contractor directly. Markham's role would be no more than allowing the contractor to deliver fill to owners at the same time as they were performing maintenance work for Markham.



Respectfully submitted by:

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On behalf of The Community Liaison Committee

## **References**

1. Brenda Librecz letter to Bob James, Member, Community Liaison Committee, dated November 12, 2014. See page 6-7.
2. Former landfill boundary diagram. See page 8.
3. Settlement amount from 2007 to 2015. See page 9.
4. Settlement effects on properties and fences. See page 10-14.

**Reference 1 - Brenda Librecz letter to Bob James, Member, Community Liaison Committee, dated November 12, 2014.**



November 12, 2014

Mr. Bob James  
Member, Community Liaison Committee  
Vice President, Settlers Park Residents Association

**Re: Land Subsidence at the German Mills Meadow and Natural Habitat**

Mr. James:

Thank you for your letters addressed to the City Solicitor Catherine Conrad, City Clerk Kimberley Kitteringham and myself. We will attempt to clarify the City's role in monitoring and securing the former landfill and answer your questions from your letters.

Markham actively maintains the former Sabiston landfill within the City's property boundaries by providing on-going monitoring, evaluating impacts, remediating and addressing issues when necessary. With respect to settlement concerns, the best practice approach is to allow the land to settle naturally, and the City has adopted such an approach. The City's program includes a bi-annually monitoring of the settlement along the property lines and a review of the fences surrounding the property to ensure no residents are put at risk. If settlement impacts positive flow of water / run off or creates ponding areas within the City's property, the City will address the situation as it arises by providing clean fill in those specific areas.

In addition, the City is responsible for the maintenance of the chain-link fence and our shared property line and has always been a good neighbour in ensuring its stability and safety. On the private owner's side of the property line, it is the owner's responsibility to address settlement concerns. Our adjacent property owners are able to contact the City directly to discuss their property line concerns and work with the City on mutually acceptable solutions that stabilize the shared property line.

With respect to your assertion that the City has a legal and moral obligation to not allow the settlement to adversely affect the abutting private properties, we have researched this from a legal perspective and have determined that this is not the case. The City does not have a legal obligation as an adjacent owner to prevent the natural subsidence of residential lots resulting from the subsidence of the landfill which underlies those residential properties. A landowner is not responsible for the adverse effects of settlement on abutting properties unless the owner has done something to initiate or exacerbate the settlement. The City acquired the site after the landfill had closed and the City has done nothing to exacerbate the natural settlement of the site.

It is not the City's objective to maintain the grades at any particular level on the landfill site. It is acknowledged that this landfill will continue to settle for decades and to neutralize the settlement throughout the Meadow would not only be a crippling expense, but it would not be in the best ecological interests of the Meadow. Interference with the Meadow and its habitat is minimized to the extent possible, as described above. We have had numerous community members express concerns

about protecting the wildlife and the natural habitat in this area. Our approach to managing this landfill achieves that outcome.

With respect to your question regarding the fill offered by the Bayview Golf and Country Club (BGCC), below is the sequence of events that occurred from the time that the fill was offered up to and including the July 7, 2014 Liaison Committee meeting. At the July 7 meeting, staff did not indicate that the offer was still being pursued.

- On Sept 30, 2013 Liaison Committee meeting, Joe Coleman (BGCC) informed that fill would be available for the City's use if necessary from the Golf Course due to construction of a pond. Staff determined that the City did not require any fill on City's lands. And therefore, on May 26, 2014, staff informed BGCC that the City does not require any fill at this time.
- City staff's communication to the Liaison Committee on March 30<sup>th</sup> and July 7, 2014 related to the provision of fill on private properties. At both meetings the discussions were related to providing fill onto private properties and not on City properties.

Finally, with respect to the documentation relating to the litigation commenced more than 20 years ago by some of the abutting owners, the City Solicitor advises that such documents are generally confidential. Any property owner who was involved in that litigation, or subsequent owner of the property, can contact the City Solicitor and obtain copies of any documents that are not confidential. Others wishing to access any such documents may make a request through the *Municipal Freedom of Information and Protection of Privacy Act* process, and the applications will be considered by the Clerk's Office.

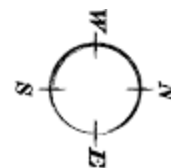
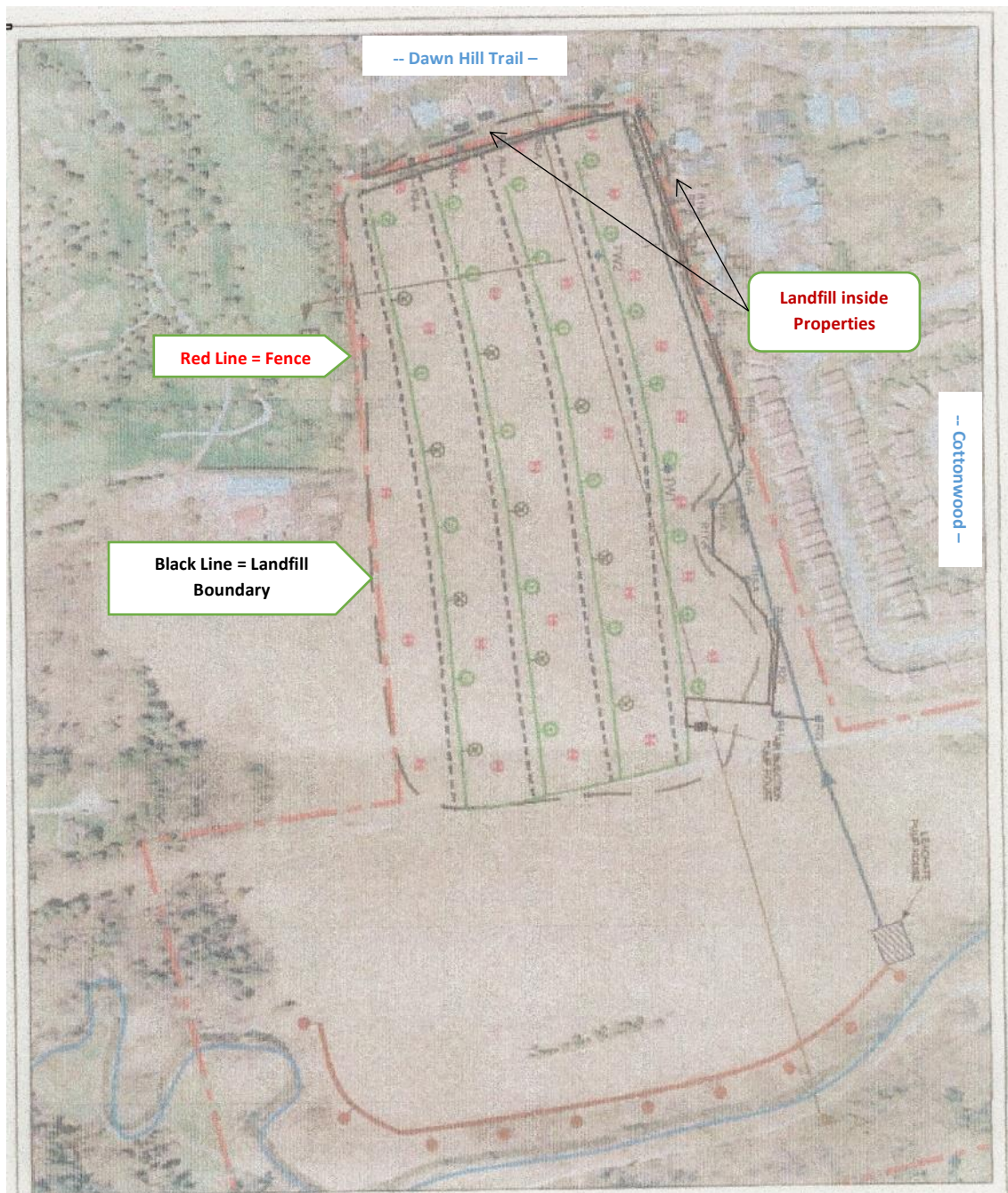
Yours sincerely,



Brenda Librecz  
Commissioner of Community & Fire Services  
Cc:

Catherine Conrad, City Solicitor  
Kimberley Kitteringham, City Clerk and Returning Officer  
Phoebe Fu, Director of Asset Management  
German Mill Meadow Community Liaison Committee Members  
Mayor Frank Scarpitti  
Deputy Mayor Jack Heath

## Reference 2 - Former landfill boundary diagram.

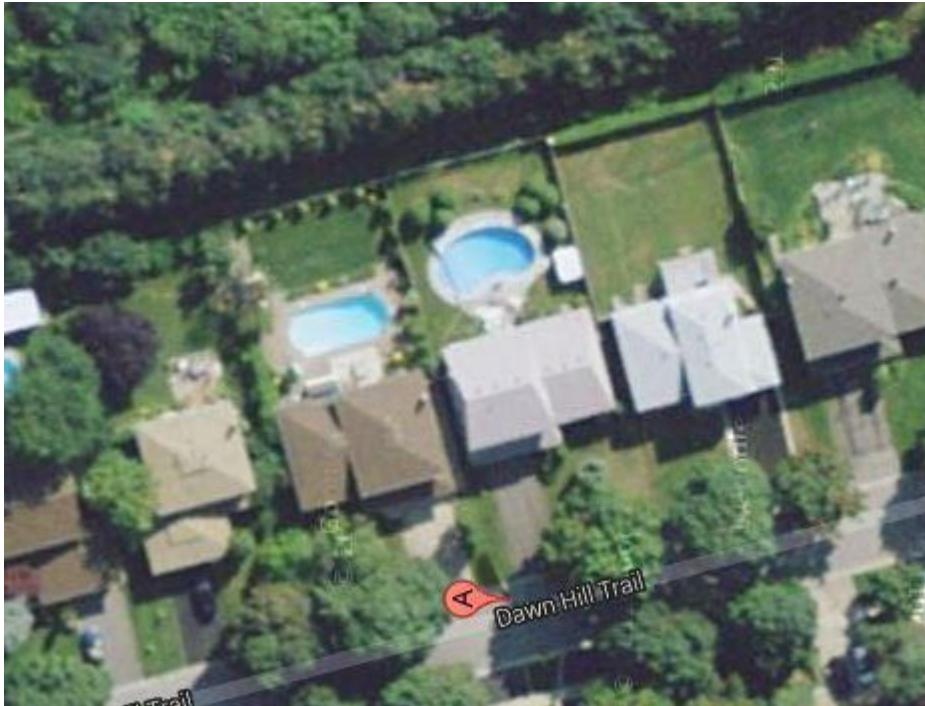


**Reference 3 - Settlement amount from 2007 to 2015.**

<b>Location</b>	<b>Difference in Elevation</b>		
	<i>2007 - 2014</i>	<i>Sept 2014 – Sept 2015</i>	<i>2007 – Sept 2015</i>
<i>Between 9 and 11 Pine Knoll</i>	<i>-1.6in</i>	<i>0.4 in (10mm)</i>	<i>-1.2in</i>
<i>Between 7 and 9 Pine Knoll</i>	<i>-1.2in</i>	<i>1.2 in (30mm)</i>	<i>0</i>
<i>Between 5 and 7 Pine Knoll</i>	<i>3.9in</i>	<i>-1.2 in (-30mm)</i>	<i>2.7in</i>
<i>Between 3 and 5 Pine Knoll</i>	<i>-10.2in</i>	<i>-0.8 in (-20mm)</i>	<i>-11in</i>
<i>Between 3 Pine Knoll and 69 Dawn Hill</i>	<i>-2.8in</i>	<i>0.4 in (10mm)</i>	<i>-2.4in</i>
<i>Between 69 and 67 Dawn Hill</i>	<i>-0.8in</i>	<i>-3.2 in (-80mm)</i>	<i>-4.0in</i>
<i>Between 67 and 65 Dawn Hill</i>	<i>-15.0in</i>	<i>-0.8 in (-20mm)</i>	<i>-15.8in</i>
<i>Between 65 and 63 Dawn Hill</i>	<i>-5.9in</i>	<i>-1.6 in (-40mm)</i>	<i>-7.5in</i>
<i>Between 63 and 61 Dawn Hill</i>	<i>-15.0in</i>	<i>-2.0 in (-80mm)</i>	<i>-17.0in</i>
<i>Between 61 and 59 Dawn Hill</i>	<i>-11.8in</i>	<i>-1.6 in</i>	<i>-13.4in</i>
<i>Between 59 and 57 Dawn Hill</i>	<i>-15.4in</i>	<i>-0.8 in</i>	<i>-16.2in</i>
<i>Between 57 and 55 Dawn Hill</i>	<i>-17.7in</i>	<i>0.0 in</i>	<i>-17.7in</i>
<i>Between 55 and 53 Dawn Hill</i>	<i>-18.4in</i>	<i>-0.8 in</i>	<i>-19.2in</i>
<i>Between 53 and 51 Dawn Hill</i>	<i>-11.4in</i>	<i>?</i>	<i>-11.4in?</i>



#### Reference 4 - Settlement effects on properties and fences.



Aerial view (Google Map) of landfill boundary inside Dawn Hill Trail properties.



Landfill boundary inside property.



Landfill boundary inside property.

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Landfill settlement #1

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Landfill settlement #2 (fence pole shifted)

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Landfill Settlement #3 (fence pole shifted)

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Landfill Settlement #4 (gazabo foundation shifted, extra supports required )

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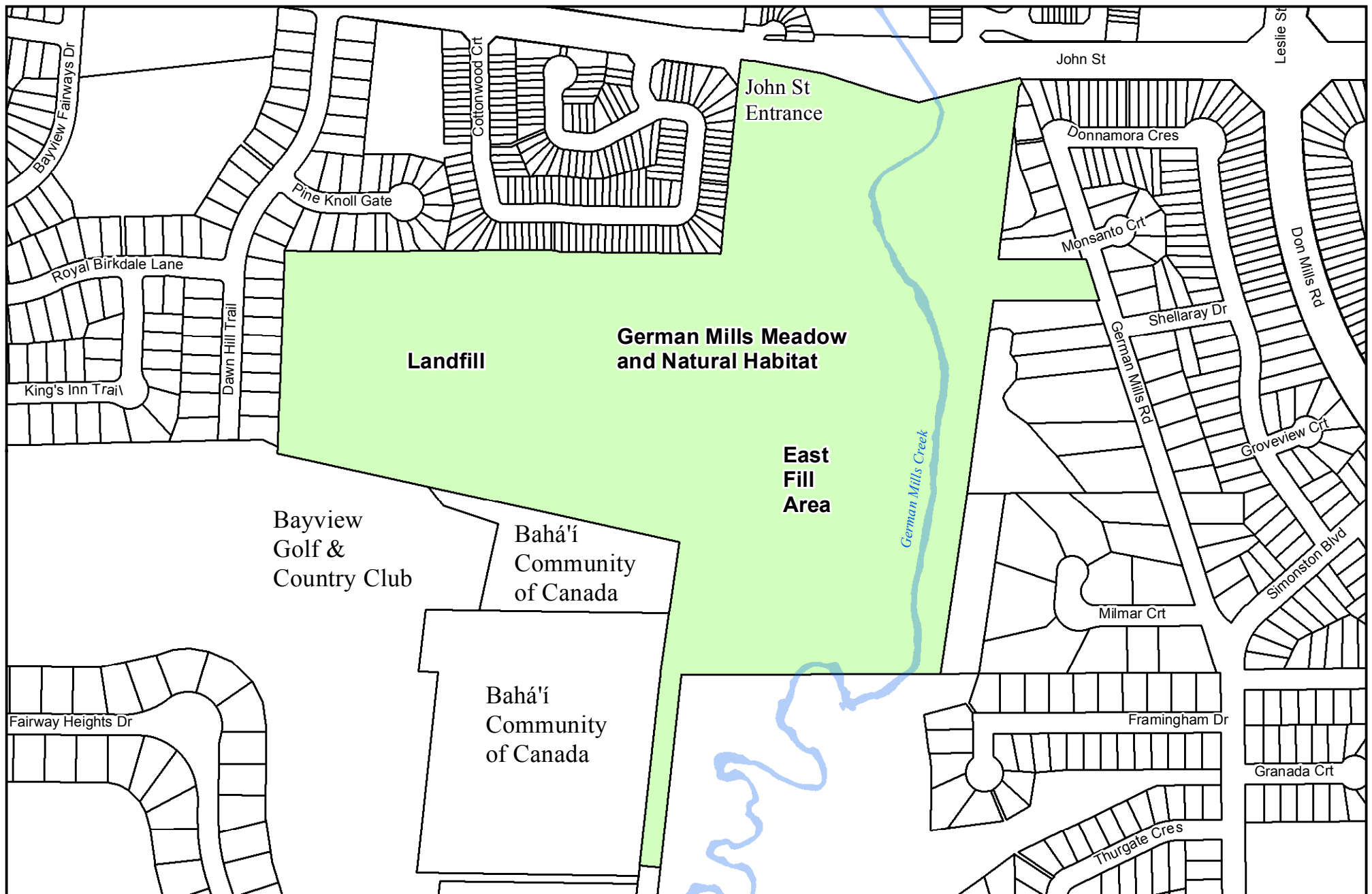
A losing battle.

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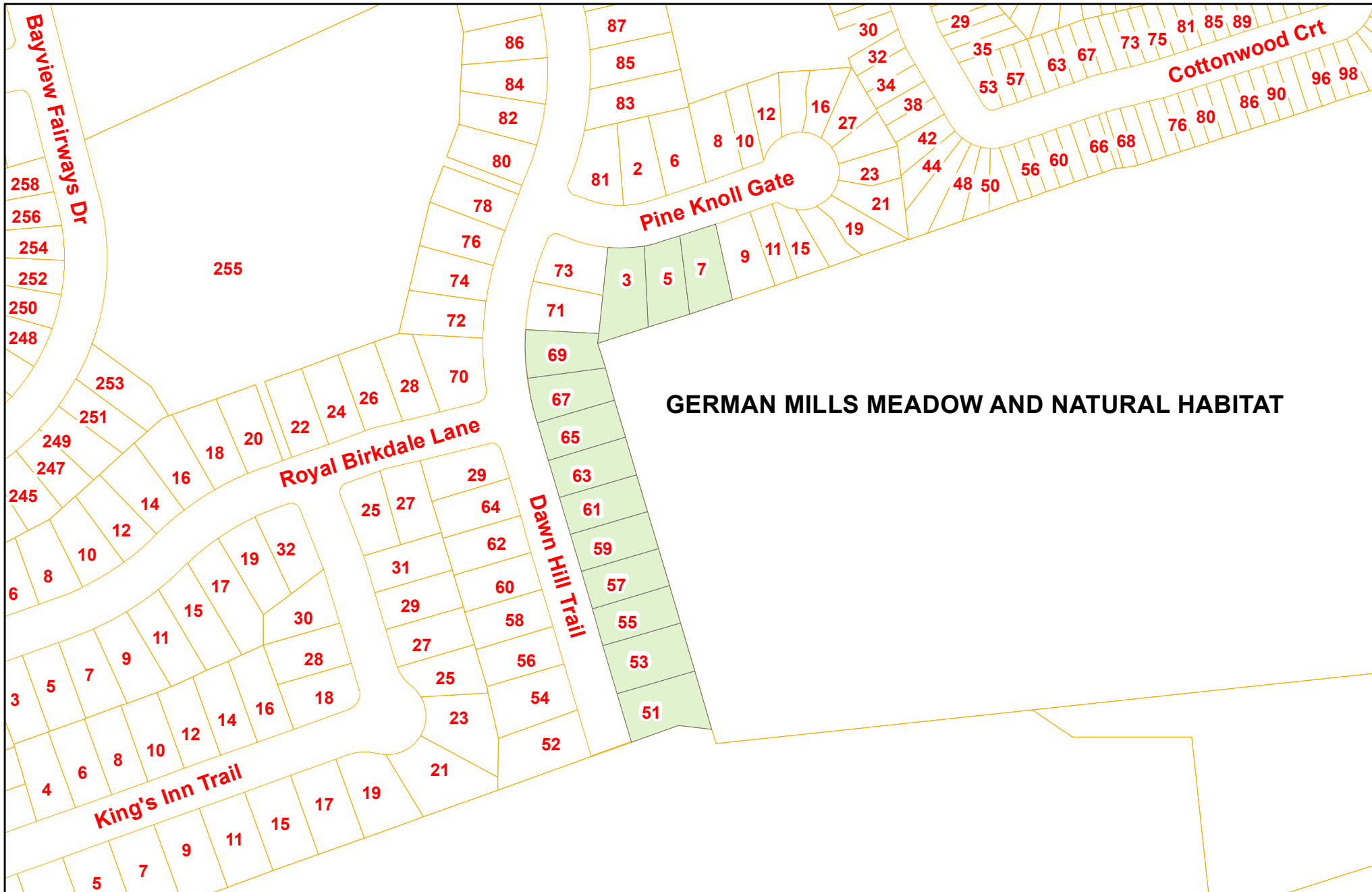


Tripping Hazard.

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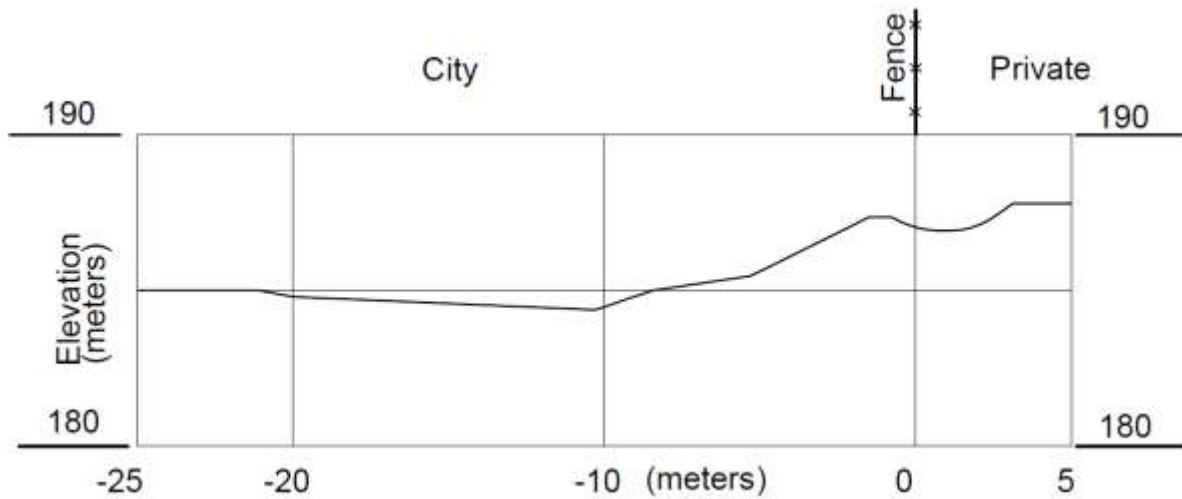




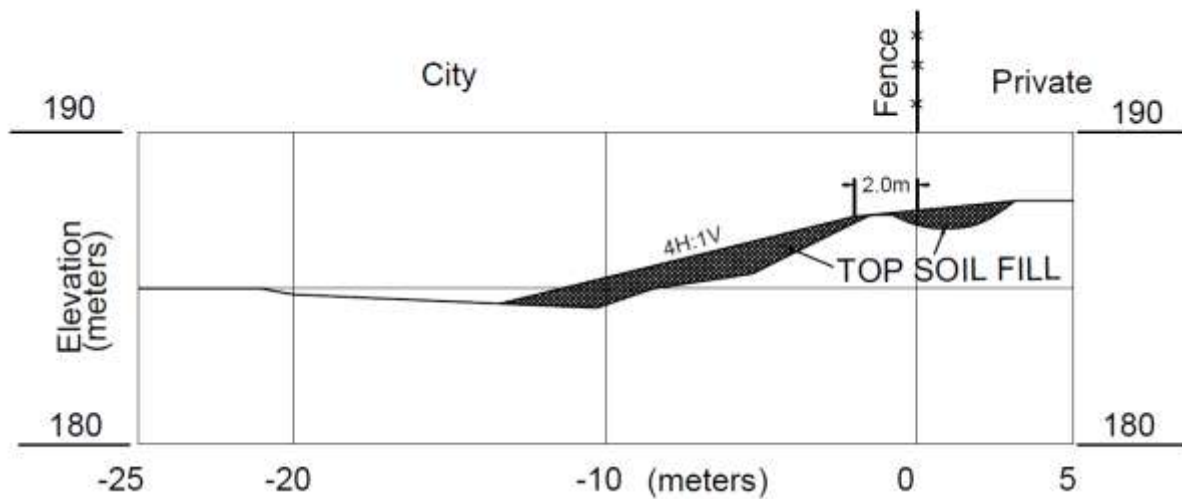


## Attachment C Properties Experiencing Back Yard Settlement





**EXISTING CROSS SECTION**



**RAISED GRADE SCENARIO AT THE PROPERTY LINE**

GERMAN MILLS MEADOW AND NATURAL HABITAT - ADDITIONAL MAINTENANCE  
NEAR NORTH-WEST SIDE OF THE MEADOW ALONG THE PROPERTY LINE –

ATTACHMENT “D” - EXISTING CROSS SECTION AND RAISED GRADE SCENARIO AT  
THE PROPERTY LINE