



9750 SW Nimbus Avenue  
Beaverton, OR 97008-7172  
p| 503-641-3478 f| 503-644-8034

## SITE VISIT REPORT

Page 1 of 7

<b>Project:</b>	Trillium Park Drive	<b>Date:</b>	February 21, 2017	<b>Project No.:</b>	4450-B
<b>Feature:</b>	Landslide	<b>Time of Site Visit:</b>	1145-100 pm	<b>Weather:</b>	Rain
<b>Client:</b>	City of Oregon City	<b>Submitted by:</b>	George Freitag, CEG	<b>Owner:</b>	City of Oregon City
<b>Site Address:</b>	17300 block of Trillium Park Drive	<b>Building Permit No.</b>	N/A		

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At the request of Aleta Froman-Goodrich with the City of Oregon City (City), GRI visited the location of a landslide that has damaged the Trillium Park Drive roadway in Oregon City, Oregon. Slope instability was documented in the area in 1999 on private property. At the request of the City, GRI installed an inclinometer in the roadway in 2006 that indicated movement in 2008 at a depth of about 65 ft below the ground surface.

Upon arrival, met with Aleta and two other City staff. Following a period of prolonged, intense precipitation, Aleta indicated a water line in the roadway broke the afternoon of February 16. The break caused damage to the asphalt pavement and some tension cracks were visible in the pavement north of the break. The break also caused the pavement to 'inflate' upward due to pressure. An unknown amount of water migrated between the pavement and the subgrade causing damage. Water reportedly exited the surface monument area for the inclinometer. The water line was shut by means of valves located north and south of the break area and the road was closed.

On the morning of February 21, City crews noticed additional pavement cracking and a downed tree in the landslide area and contacted GRI.

### February 21 Landslide Observations

Several sets of pavement and ground cracks were observed along Trillium Park Drive. Uphill ground cracks were observed west of the roadway to a point near a surface water catch basin. Surface water was observed flowing along the curb into a pavement joint that had separated. At the time of the visit, most open pavement cracks had about 1/8 to 1/4-in. separation. Aleta indicated that many sets of cracks appeared wider than observed on February 16. City staff indicated "new-looking" foundation cracks were visible in the residence at 13776 Canyon Court and that the resident reported newly cracked interior sheetrock and "sticking" doors. No ground cracks were observed in the parking lot or grassy area between Willamette Falls hospital and the top of slope uphill (west) of the landslide. In addition to City staff, the owner of the residence at 13776 Canyon Court was present for a short period at the beginning of the site visit.



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## SITE VISIT REPORT

Page 2 of 7

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### Preliminary Recommendations

Reviewed the roadway site conditions with Aleta. Recommended the City building official review the conditions at the residence at 13776 Canyon Court. In our opinion, as a short term measure, effort should be made to limit the amount of surface water that can concentrate and flow into the landslide area by means of sealing or rerouting surface water from of pavement cracks or open pavement joints that have separated. Additionally, effort should be made to evaluate the inclinometer and obtain a current reading if the installation is still usable. The condition of the storm and sanitary sewer lines in the roadway that cross the landslide area should be evaluated with video or other means. City staff should periodically evaluate the

Several photographs of the landslide features are provided below.



View south of landslide. Red circle shows approximate location of broken water line and inflated/damaged pavement. Green circle shows inclinometer monument. Yellow circle shows pavement cracking and joint separation.



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## SITE VISIT REPORT

---

Page 3 of 7

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View north showing pavement cracks. Note downed tree pieces in background.



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Page 4 of 7

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Detail view in north portion of landslide showing pavement cracks around sewer manhole.





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---

Page 5 of 7

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Detail view in west portion of landslide showing pavement cracks in asphalt sidewalk, tension cracks in unpaved dirt area, and joint opening between concrete curb and asphalt roadway.



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Page 6 of 7

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Red circle shows surface water entering uphill (south) portion of landslide along open sidewalk and curb pavement joints. Orange arrow shows direction of water flow from uphill (right).



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# SITE VISIT REPORT

Page 7 of 7

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## Closing Remarks

GRI looks forward to assisting the City with further consultation regarding the landslide. This Site Visit Report documents our preliminary findings and recommendations regarding the observed area of slope instability. Our opinions are limited in that we did not perform any subsurface investigations, detailed slope hazard mapping, slope stability analysis, or other services beyond a brief site visit. GRI has exercised professional judgment to accommodate the unique site, project, and client/owner involved. Any questions in this respect should be addressed to GRI. No warranty, express or implied, is provided.



Renews 02/2018

**Date:** 2/22/17  
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**Copies to:** \_\_\_\_\_  
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