

## Subject: FLOW DIVERSION FROM STREET GUTTER TO SIDEWALK AND SHARED USE PATH

The installation of an accessible ramp on Scribe has resulted in allowing stormwater that was previously conveyed in the street gutter to a curb inlet is now directed along the accessible sidewalk connection to the shared use path where it is causing excessive erosion. We estimate that approximately 0.90 acres containing 1320 feet of roadway drains to the point where it escapes the curb. We estimate the 25 year peak flow from this approximately 7 cfs. In addition to causing erosion of the trail, this condition violate good engineering practice and City of Austin Drainage Criteria. Criteria Violated are highlighted below.

### 1.2.2 - General

A. Stormwater runoff peak flow rates for the two (2), ten (10), 25 and 100-year frequency storms shall not cause increased inundation of any building or roadway surface or create any additional adverse flooding impacts.

B. Street curbs, gutters, inlets and storm drains shall be designed to intercept, contain and transport all runoff from the 25-year frequency storm.

C. In addition to B. above, the public drainage system shall be designed to convey those flows from greater than 25-year frequency storm up to and including the 100-year frequency storm within defined public rights of way or drainage easements.

### 1.2.3 - Street Drainage

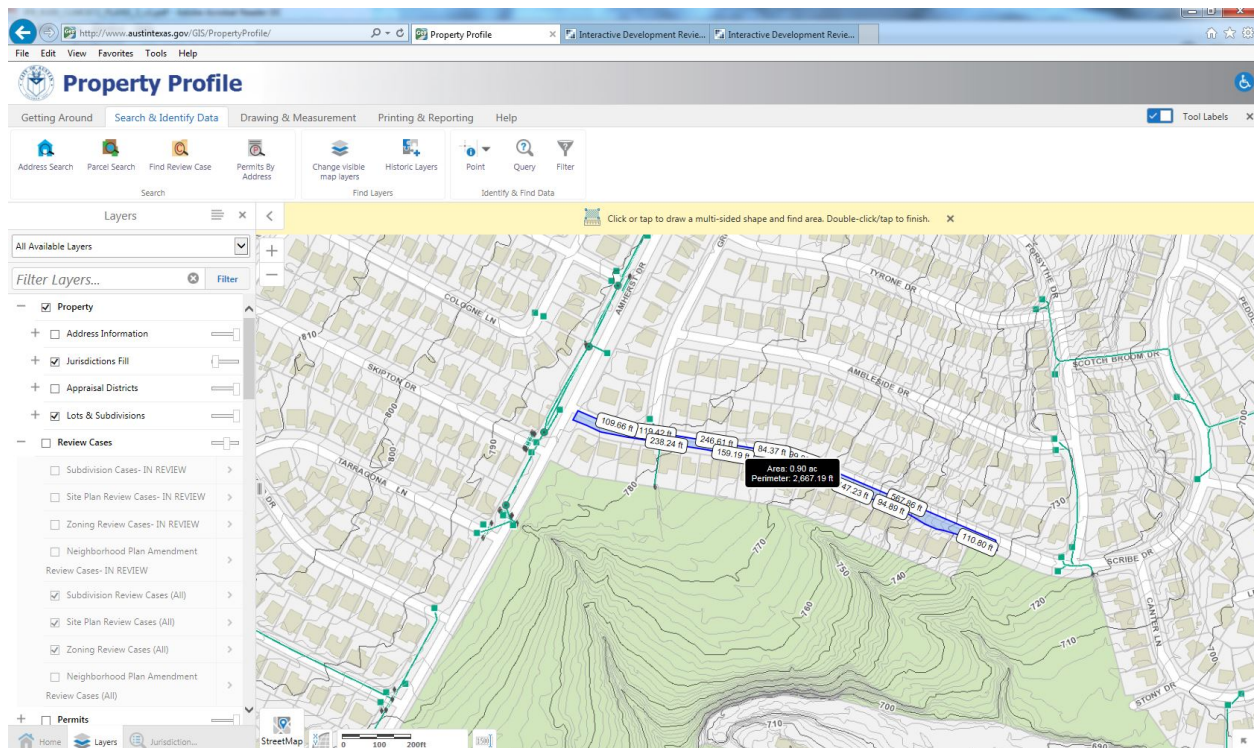
A. No lowering of the standard height of street crown shall be allowed for the purposes of obtaining additional hydraulic capacity.

B. For non-curbed streets all flows for the 100-year frequency storm shall be contained within paralleling roadside ditches, medians, drainage channels or other drainage facilities located within public rights-of-way or drainage easements.

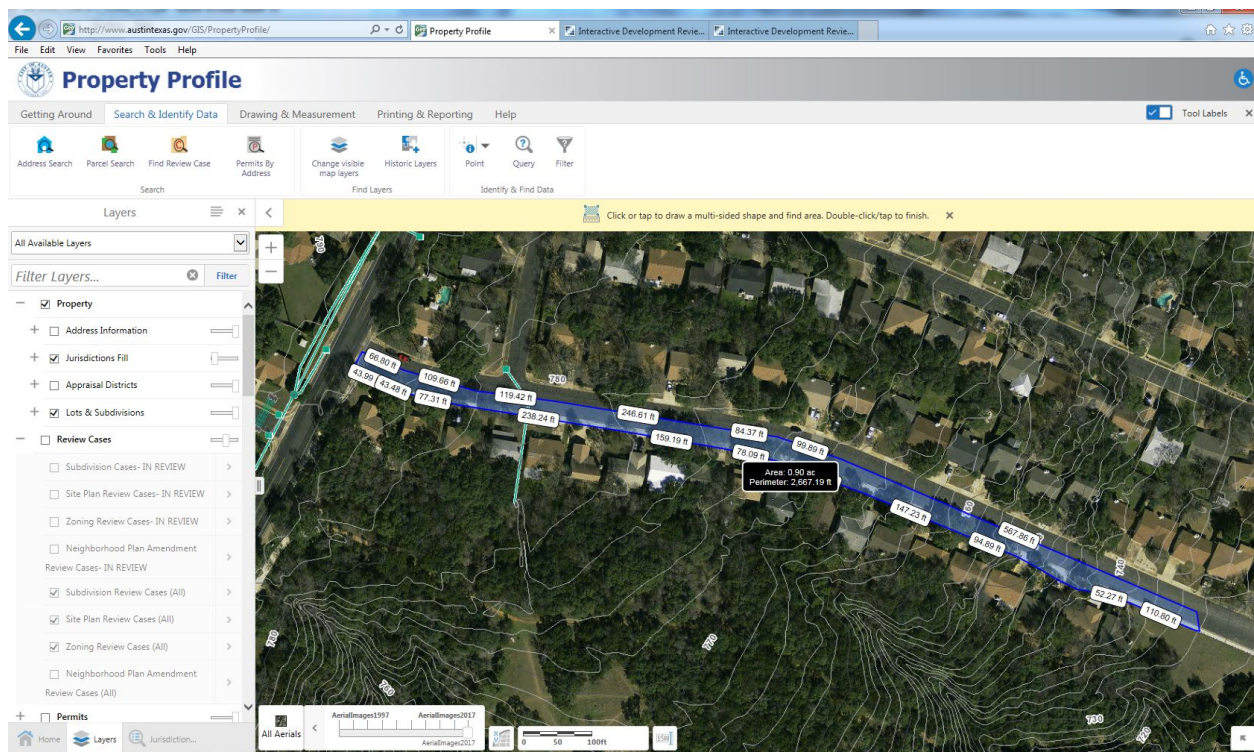
C. No outlet structures from stormwater management facilities, groundwater collection, parking detention, or other improvements discharging concentrated flows shall be designed to discharge concentrated flow directly onto arterial or collector streets. For local streets, no concentrated discharge from sites larger than 0.25 acres shall be permitted. All concentrated discharges shall be conveyed by a closed conduit to the nearest existing storm drain.

D. Concentrated discharge across a sidewalk area will not be allowed. A channel section can be used under the sidewalk area, provided the outlet device utilizes sheet flow methods, maintains a minimum three (3) foot horizontal separation from all utility infrastructure, and it is covered by a method approved by the Public Works Department.

Aerial map of site and drainage area:



Closer view of site and drainage area





Runoff estimate:

Area #	Area, ac	% IC	Sheet flow				Shall conc				Channel				Rainfall Intensity, in/hr			
			L, ft	n	s, ft/ft	tc, min	L, ft	n	s, ft/ft	tc, min	L, ft	v, fps	tc, min	Tc	I1	I10	I25	I100
1	0.9	84.18%	20	0.2	0.08	0.337	100	0.1	0.08	0.589	1200	6	3.333	5	5.522	8.642	9.839	11.88

Tc	Rainfall Intensity, in/hr				undeveloped				developed				composite				Q1	Q10	Q25	Q100
	I1	I10	I25	I100	C1	C10	C25	C100	C2	C10	C25	C100	C1	C10	C25	C100				
5	5.522	8.642	9.839	11.88	0.18	0.37	0.41	0.48	0.72	0.83	0.88	0.97	0.635	0.757	0.806	0.892	3.153	5.889	7.134	9.542

Photos 1 & 2: view of ADA access east to west - drainage area extends beyond top of hill (approx. 1320 lf)



Photo 3: ground level view of curb cut for ADA sidewalk showing approx. 0% grade across ramp/sidewalk



Photo 4: view of ADA ramp and sidewalk to shared use path





Photo 5: curb inlet beyond ADA access where flow is intended to be collected for discharge to storm drain system.



Photo 6: resultant erosion (after repairs)



Additional photos can be viewed at

<https://photos.app.goo.gl/oDpdZZVG34pZJ2RJ6>

Project information can be accessed via the following links

plans <https://drive.google.com/open?id=1gcHjcEn4CYnIRmLhaFmPhAWnbNIK91bs>

see plan sheet 14 for ADA access and sidewalk.

manual: <https://drive.google.com/open?id=1TF3MzrhLG5ZkQro2gNQStyouCGSnnmiR>