



Memorandum

To: Vail Town Council
From: Community Development Department
Date: February 7, 2017
Subject: Progress on Stormwater Education and Infrastructure Improvements

I. PURPOSE

The purpose of this memorandum is to update the Vail Town Council on the current progress of stormwater education, monitoring and infrastructural upgrades and improvements.

II. BACKGROUND

Stormwater runoff is a major cause of the decline of aquatic systems across the United States. Through the development of the Gore Creek Valley over the past 50-60 years, the land surrounding Gore Creek, once dominated by wetlands, plant roots and loamy soil is now dominated by impervious and paved surfaces. The loss of filtration that was once provided by the natural soils and vegetation has had an inevitable impact on Gore Creek and led to its current status as a 303(d) listed stream.

Stormwater runoff is a primary contributor of pollutants to Gore Creek and its tributaries. Based on some of the materials known to have been discharged into storm drains in 2016, there is a clear need to educate the community about the impacts stormwater contaminants have on the creek.

Since it is impractical and infeasible to prevent all pollutants from reaching Vail's stormwater systems, there is a need to accompany any education and outreach campaign with targeted, prioritized upgrades to the town's stormwater filtration infrastructure. Some upgrades have already taken place and several others are planned for 2017.

III. Stormwater Education Campaign

Based on informal surveys of town employees and community members and on pollutants known to have been dumped or discharged into storm drains in Vail in 2016, it has become clear that many are not aware how storm sewers differ from sanitary sewers and the direct impact that pollutants discharged into storm sewers have on Gore Creek. In order to address this widespread information gap, the environmental team has begun a targeted stormwater education campaign. The campaign seeks to inform members of the community that most storm drains flow directly into Gore Creek without filtration. Many community members seem to be unaware that storm sewers differ from sanitary sewers in that they are unfiltered and flow into Gore Creek without receiving any treatment or filtration. Any drain with an open grate is a storm drain while sanitary sewers are always capped with a manhole cover. The campaign uses clear, simple messaging to elucidate the direct impacts that dumping into storm drains has on local waterways. It also offers information about the proper means to dispose of common contaminants.

IV. Stormwater Filtration Upgrades

In tandem with the education campaign, the town is investing significant resources in infrastructure upgrades to better filter runoff from roads and other impervious surfaces before the water reaches Gore Creek. The town is in the process of employing several different approaches to filtration depending on what is most appropriate and effective in a given situation.

First, the town is restoring riparian and upland habitat to take advantage of natural systems such as soil and roots to filter runoff before it reaches Gore Creek. Bank stabilization projects using native vegetation and efforts to encourage private landowners to restore native vegetation are examples of this approach.

Second, the town will continue to install stormwater filters in places where filtration is most needed, feasible and cost-effective. Stormwater filtration systems, contact filters and sand and oil vaults all come at a substantial cost and cannot be installed in every stormwater system in town. Twenty-seven such systems have already been installed in town in places where several storm sewers come together and filtration systems have the highest impact. The town engineers are in the process of identifying other places where advanced stormwater filtration would be most effective and have \$500,000 budgeted for stormwater upgrades in 2017. Town engineers also designed and installed an advanced filtration system at the Public Works snow dump in the fall of 2016.

Finally, best management practices such as rain gardens, bio-swales and pervious pavement will be deployed in several areas to mimic natural systems and restore some of the watershed's capacity to filter runoff through soils and vegetation. The planting and restoration project at the East Vail interchange and a state grant-funded project at Public Works are both examples of this approach.

V. Monitoring

In 2015 and 2016, several instances of cross connected sanitary and storm sewers were discovered in the Town of Vail. This means that untreated sewage was being discharged directly into Gore Creek. All identified cross connections have since been addressed and rectified. The environmental team and Eagle River Water and Sanitation District continue to regularly monitor outfalls of concern for E. coli contamination.

As directed by the Gore Creek Strategic Action Plan, in 2015, the Town contracted SGM to inspect and map all stormwater infrastructure in town. As part of this process, SGM staff identified stormwater infrastructure that was concerning due to odor, excessive algae or cracked or broken pipes. The result of this process was a comprehensive database and map of the town's stormwater systems. This database has been an invaluable tool in identifying areas of concern and prioritizing stormwater systems that would benefit most from repairs, upgrades or additional filtration.

VI. Next Steps

In 2017, the environmental team will continue to educate the community about storm drains through advertising, newspaper articles, web content and a summer are installation. Simultaneously, town engineers and landscape architects will be prioritizing locations for advanced storm drain filters and finalizing the details of the East vail Interchange and Public Works stormwater projects. These substantial projects on the part of the town will be invaluable examples to highlight as part of the stormwater education campaign as well as the greater Gore Creek restoration effort.