



Item No. 1 Town of Atherton

CITY COUNCIL STAFF REPORT – STUDY SESSION

**TO: HONORABLE MAYOR AND CITY COUNCIL
GEORGE RODERICKS, CITY MANAGER**

**THROUGH: MICHAEL KASHIWAGI
COMMUNITY SERVICES DIRECTOR**

FROM: GORDON SIEBERT, CITY ENGINEER

DATE: SEPTEMBER 2, 2015

SUBJECT: REVIEW OF TOWN-WIDE DRAINAGE STUDY UPDATE

RECOMMENDATION

Review the Drainage Master Plan Study and provide feedback regarding proposed projects and follow-up activities.

BACKGROUND

The City Council approved a contract in 2013 with NV5 to update the Drainage Master Plan (DMP). The original DMP was prepared in 2001. In 2014, the Council amended the contract to add a task to analyze additional storage options in order to accommodate more storm water flow over a longer period of time and reduce the probability of flooding from the Atherton Channel. NV5 completed the base study and additional analysis and is present this evening to present the Study and answer questions from Council and public.

No action is required at this time by the City Council. Staff is seeking feedback and direction with respect to next steps.

ANALYSIS

The 2014 DMP is built upon the results of the 2001 study analyzing theoretical storm water flow patterns, developing an inventory of drainage infrastructure and recommending projects to reduce flooding to quickly move water through and out of Atherton. Since 2001, there have been changes in Federal and State laws adding additional local requirements to improve water quality. As a consequence of regulations and increased interest in sustainability, Atherton recently revised its

Grading and Drainage ordinances to require development projects to mitigate their adverse impacts on water quality and also reduce the flow of storm water from private property.

The 2014 DMP Update defined watersheds using existing topographic maps and relied on the original study for much of the field work. The 2014 DMP includes rough calculations of flow but relied on the field work of the prior study such that the calculations were not verified in the field. The 2014 DMP Update recognizes infrastructure improvements made since 2001 and focuses on analysis and recommendations for the larger projects in the Atherton Channel and in Town rights-of-way that would mitigate adverse flooding and water quality impacts from storm water flow. Projects were grouped into tiers based on criteria of potential impacts to life and safety, property damage, and implementation feasibility. A brief discussion of the project tiers follows.

Tier 1 Projects

Tier 1 projects are all in the Upper Atherton Channel. Implementation of these projects would reduce channel erosion and improve water quality. Projects within the Channel require various State and Federal permits. No determination of responsibility for these projects has been made at this time. Some of these projects may be private property owner responsibility and others may be Town responsibility. In addition, there are some that may be pursued as part of the Atherton Channel District jointly as public-private projects. In the recent past, the Town has declined to pursue projects where it lacks ownership or easements within the Channel or where clear connection to prior Town projects has not been established. Project Q is being pursued by Las Lomas School District at its cost. Staff is working with the District and their engineer, NV5, to review the project.

Tier 2 & 3 Projects

Tiers 2 & 3 projects include some near or in the Channel as well as other local projects. A number of these projects involve re-grading of public streets as well as adjacent drainage patterns. The improvements would convey storm water more effectively and reduce localized flooding. Further analysis is required during preliminary design to address the possibility of exacerbating downstream conditions.

Tier 4 Projects

Tier 4 projects are lower in priority due to their viability. These projects are limited in their ability to reduce local flooding due to lack of downstream capacity (outside of Atherton). For these projects, in order to effect improvement, Atherton could pursue one of three options:

1. Cooperate with downstream jurisdictions to increase downstream capacity; or
2. Construct off-line storage, as recommended at Las Lomas School and in Holbrook-Palmer Park; or
3. Require new development to reduce their outflow during storm events.

This last option has been implemented throughout San Mateo County, including by neighboring jurisdictions, due to requirements contained in the Municipal Regional Permit (MRP) issued by the Regional Water Quality Control Board. Staff is monitoring the efforts of downstream jurisdictions for the Bayfront Canal, but its implementation is not assured due to cost considerations. Similarly, Projects M1 & M5 have not been advanced due to cost and the fact that required partner agencies (Caltrans) have not committed funding. One possible advantage of pursuing Option 2 is that as water is passed through vegetation, the vegetation acts as a “living filter,” mainly for waterborne soil particles, as demonstrated by the recent installation at Sacred Heart School. This provides an added benefit to the underlying water table.

Tier 5 Projects

Tier 5 projects may be considered “on hold” pending future verification of previously observed conditions and problems.

In addition to the recommendations regarding projects, the 2014 DMP Study Update evaluated Atherton’s compliance with requirements under the Municipal Regional Permit (MRP). The 2014 DMP Study summarized compliance requirements for the activity that is most prevalent in Atherton, which is New Development and Redevelopment. The Study recommends that the Town employ a checklist to assure that reviews meet MRP requirements. The Town currently uses the checklist. The 2014 DMP Study Update also mentioned the use of in-lieu treatment, but recommended against the use of an in-lieu fee, which is consistent with Town practice.

As described in the 2014 DMP Study Update, overall Atherton has relatively few problems, and those do not pose significant risks to people and only minor risks to property, with only a few accessory structures potentially affected.

The Town has completed 26 projects from the 2001 Study. However, a number of projects remain to be considered. The projects in Tiers 1, 2 & 3 reduce Channel erosion and improve localized drainage. Projects listed in Tiers 4 & 5 also improve localized drainage, while a few would greatly reduce on-street flooding. Some require regional cooperation and have a larger cost impact.

Atherton has streets that flood for relatively short periods of time following storms determined to be 10-year or greater events. While some segments of streets may remain flooded for up to several days, traffic is generally able to use the streets.

POLICY FOCUS

There are three distinctly different paths to take to improve storm water management. The first is to proceed in order of priority with the understanding that many Channel projects may be determined to be the responsibility of adjacent property owners, thus reducing the Town’s financial requirements. A second path, in order to reduce known street flooding, is to embark on a major regional endeavor to construct pump stations and major pipe and channel systems. Finally, the recommended off-line storage could be constructed for the Atherton Channel, but its benefits are relatively small, but are within the Town’s purview and financial capacity.

Staff is seeking feedback from the Council on the above policy alternatives. After receiving feedback, staff will begin to prioritize the projects accordingly, assess ownership and responsibility, and work with adjacent property owners. With each project, staff will evaluate the possibility of a Drainage Assessment District to facilitate larger funding options.

FISCAL IMPACT

The cost to implement all projects in Tiers 1, 2 & 3 is estimated at approximately \$18 million. As mentioned, further research is needed to determine if responsibility for some of the work could be assigned to private property owners. Alternately, Tiers 4 & 5 projects total \$23 million, and exclude costs for systems to convey the water to the Bay after it leaves Atherton.

There is no fiscal impact relative to the review of this Staff Report. Specific projects and funding allocations would be discussed at a future City Council meeting.

PUBLIC NOTICE

Public notification was achieved by posting the agenda, with this agenda item being listed, at least 72 hours prior to the meeting in print and electronically. Information about the project is also disseminated via the Town's electronic News Flash and Atherton Online. There are approximately 1,200 subscribers to the Town's electronic News Flash publications. Subscribers include residents as well as stakeholders – to include, but be not limited to, media outlets, school districts, Menlo Park Fire District, service providers (water, power, and sewer), and regional elected officials.

ATTACHMENTS

Table 6-1, Summary of Recommended Drainage Improvements

Link to the digital version of the 2014 Drainage Master Plan Study:

- <http://ca-atherton.civicplus.com/DocumentCenter/View/2263>

**TABLE 6-1
TOWN OF ATHERTON DRAINAGE STUDY
SUMMARY OF RECOMMENDED DRAINAGE IMPROVEMENT PROJECTS**

ID No.	Description	Total Cost, \$
TIER 1		
H	SF Waterline/Reservoir Channel Reline & Erosion Control	2,360,000
Q	Alameda De Las Pulgas/Camino Al Lago Upgrade Existing Channel ^a	1,467,000
II1	Reline Channel Slopes (Upstream of Alameda de las Pulgas)	2,000,000
JJ1	Reline Channel Bottom (Upstream of Alameda de las Pulgas)	310,000
Tier 1 Subtotal		6,137,000
Tier 1 Subtotal (Rounded)		6,140,000
TIER 2		
II2	Reline Channel Slopes (Alameda de las Pulgas to El Camino Real)	2,000,000
JJ2	Reline Channel Bottom (Alameda de las Pulgas to El Camino Real)	310,000
U1	Barry/Elena Upgrade Channel	2,300,820
E2	Mandarin SD System	322,000
M6	El Camino/Lloyd Storm Drainage System	254,000
DD1	Polhemus/Euclid/Parker Upgrade Backyard Ditch and Culvert	2,179,000
LL1	Clay Drive Storm Drain System and Barrier	52,000
N	Almendral Concrete Swale and Regrade	437,000
O	Stockbridge Concrete Swale and Regrade	697,000
LL2	Monte Vista Concrete Swale	68,000
Tier 2 Subtotal		8,619,820
Tier 2 Subtotal (Rounded)		8,620,000
TIER 3		
U2	Barry/Elena Upgrade Channel	1,700,000
HH1	Watkins South Channel & Culvert	625,000
B1	Belbrook/Walsh Storm Drainage System & Swale	79,000
Z2	Heather Storm Drainage System and Upgrade	473,000
GG1	James and Hawthorne Storm Drainage System	131,000
HH3	Reservoir Road Regrade and Crown	58,000
C1	Sutherland/Ridgeview Storm Drainage System	34,000
R	Linda Vista/Camino Al Lago Regrade Intersection	23,000
Tier 3 Subtotal		3,123,000
Tier 3 Subtotal (Rounded)		3,120,000

**Table 6-1 (cont.)
Town of Atherton Drainage Study
Summary of Recommended Drainage Improvement Projects**

ID No.	Description	Total Cost, \$
TIER 4		
HH2	Watkins/Middlefield Channel & Culvert	5,734,000
U3	Barry/Elena Upgrade Channel	2,300,820
M1	El Camino Real Storm Drainage System	2,348,000
M5	El Camino Real Storm Drainage Force Main & Pump Station	5,163,000
M2	Fair Oaks Lane Storm Drainage System	138,000
W2	Mac Bain/Alejandra/Brittany SD System and Upgrade	713,000
B2	Belbrook/Walsh Upgrade Culvert with Erosion Control	338,000
I	Selby/Stockbridge Upgrade Storm Drainage System	2,371,000
FF2	Middlefield East Upgrade Existing Storm Drainage System	629,000
FF3	East Middlefield Barriers and Backflow Preventers	17,000
V	Por Los Arboles/Valparaiso Regrade Intersection	22,000
EE1	Alejandra Swale	32,000
KK1	Polhemus/Fleur Swale Improvement and Perforated Underdrain	87,000
Tier 4 Subtotal		19,892,820
Tier 4 Subtotal (Rounded)		19,890,000
TIER 5		
E1	Alameda/Mulberry/Polhemus Upgrade Boxes & Ex. SD System	1,254,000
G	Broadacres Upgrade Culvert	350,000
CC2	Greenoaks Upgrade Existing Storm Drainage System	1,191,000
CC3	Bay Road Upgrade Existing Storm Drainage System	710,000
P	Virginia/Fair Oaks Regrade Intersection	17,000
Z1	Heather Swale	22,000
CC1	Greenoaks Swale	24,000
EE	Catalpa/Acorn Regrade Intersection	21,000
Tier 5 Subtotal		3,589,000
Tier 5 Subtotal (Rounded)		3,590,000

^a Project Q is located on school district property, not within Town ROW