



TOWN OF FAIRFAX

STAFF REPORT

October 15, 2020

TO: Planning Commission

FROM: Ben Berto, Director of Planning and Building Services

SUBJECT: Digitizing Zoning Chapter 17.060 Ridgeline Development maps

BACKGROUND

Staff continues work with the Planning Commission to develop digitized and georeferenced versions of the early 1970's paper baseline maps and other graphical products referenced in Chapter 17.060 of the Town Zoning Ordinance, and consider code clarifications appurtenant to such maps.

The Planning Commission has been reviewing the original and digitized maps at their June – September meetings, including a joint session with the Open Space Committee, and providing direction to staff on continued work.

DISCUSSION

Georeferenced map

118 parcels located in the ridgeline scenic corridor were not included in the historic list of parcels accompanying the 1974 historic Ridgeline Scenic Corridor map. Georeferencing the historic map enabled identification of the 118 additional parcels due to the map's ability to synchronize with the Assessor's Parcel maps in the areas in question, and thus locate the parcels.

Staff suggested, and the Planning Commission appears to support, including a reference in the Zoning Ordinance to this digitized georeferenced version of the 1974 map, clarifying that it is a georeferenced version of the current General Plan map and the map referenced in the Chapter 17.060 (see Attachment A).

Map Development

Staff has been focusing on developing draft georeferenced ridgeline map versions that incorporate the 150-foot horizontal and 100-foot vertical Ridgeline Scenic Corridor buffers described in Zoning Ordinance Chapter 17.060. The idea is to map these two Ridgeline Scenic Corridor boundaries and the buffers they create in a digitized map version, in addition to the historic map and a digitized, georeferenced version of the historic map.

Zoning Chapter 17.060 Ridgeline Development text will be developed to cumulatively apply the ridgeline regulations to whichever map encompasses the most area and parcels in question. If your Commission agrees, once the digitized map versions are in final form, staff will develop revised zoning ordinance language to cumulatively apply the areas encompassed by all of maps.

GIS mapping accurately defined the Ridgeline Scenic Corridor boundaries based on the horizontal and vertical distances from a lidar-developed watershed boundary map in MarinMap. The ridgeline is derived from this accurate topographic mapping that identifies where the water runs one way into a watershed on one side of the ridgeline, and the opposite way into another watershed on the opposite side.

The digital mapping of the 1974 Visual Resources Map No. 9 and associated 150/300' horizontal and 100' vertical ridgeline scenic corridor areas has revealed several instances, where either or both the ridgelines or ridgeline scenic corridors extend into the flat alluvial peneplane beyond the base of the slope of the ridge. Out of 13 total discrete ridgelines identified in Fairfax, six ridges have this problem (see Attachment B).

One of these is the westernmost mapped ridgeline in Fairfax, which comes down the south slope of the Elliot Preserve, and as shown on the original paper map, intersects with Cascade Creek (see Attachment C).

As is described below, there are some major problems in trying to apply the 150' horizontal and (especially) 100' vertical ridgeline scenic corridor dimensions to the 1974 mapped ridgelines.

100'/150' Ridgeline Scenic Corridor map

The Town has heretofore not been able to accurately map the area contained within the Ridgeline Scenic Corridor, based on the definition section in Section 17.060.020 that reads

...further defined as the area on either side of the ridgeline within 150 feet of the horizontal distance measured at right angles to the ridgeline, or 100 feet vertically of the major ridge, whichever is a greater area...

150-foot horizontal distance ridgeline map

The definition of a Ridgeline Scenic Corridors in Section 17.60.020 states a 150-foot horizontal distance, measured perpendicular to and extending on both sides of the

ridgeline is one of the ways to measure the ridgeline scenic corridor. It is relatively straightforward for the most part to map this 300-foot cumulative width, as shown in Attachment D. As can be seen, the 150-foot horizontal width (total width 300 feet) areas closely approximates the georeferenced Map of Visual Resources / Visual Resources Map No. 9 (see Attachment D).

The original map extended six designated ridges (and associated ridgeline scenic corridors) into the flats beyond the terminus of the slope. As shown in Attachments B and C, as currently defined the corresponding 150-foot horizontal ridgeline scenic corridor would also extend into both side of the 'ridgeline' into the peneplane, affecting properties that are not even on a slope.

100-foot vertical distance ridgeline map

The ridgeline scenic corridors definition also states that areas located within 100 vertical feet of major ridges to be within the ridgeline scenic corridor. This 100-foot vertical distance from the ridgeline has proven to be difficult to determine.

For one thing, a “major ridge” is not shown in the Visual Resources Map No. 9/ Map of Visual Resources. However, knowing the historical/archival nature this mapping effort, staff found a 1974 map entitled “Surface Hydrology” that calls out “major” and “minor” watershed boundaries” (see Attachment E). These watershed boundaries could be interpreted mean that the boundaries are the same as the differently named “major ridgelines” and “ridgelines” referred to in Chapter 17.060. Conversely, as discussed by a couple of Commissioners at the September meeting, every ridge for which a “ridgeline” is shown could be considered a “major ridge”.

As can be seen from Attachment F, if the surface hydrology model is used to identify major versus regular watershed boundaries/ridges, there would be only three “major ridges” within the jurisdiction limits of Fairfax. Only one of those “major ridges” extends into Fairfax any appreciable distance. The other two ridges traverse the skyline on the north and southwest corners of Town.

The other potentially “major ridge” shown in Attachment F is located in the center of the west side of Fairfax, runs downward from roughly west to east, and terminates on the downhill side of Frustuck Avenue. It is referred to as “Fairfax Ridge” in Attachment G.

The downhill terminus of Fairfax Ridge as drawn in the 1974 map creates a significant mapping issue in attempting to apply the 100-foot vertical ridgeline scenic corridor. Similar to the Elliot Preserve ridgeline and closeup diagram (Attachment C), the ridgeline runs too far downhill. Although Fairfax Ridge does not extend all the way into the flatlands, at the ridgeline’s lowest elevation terminus, the 100’ vertical drop from the ridgeline would, as currently written in Chapter 17.060, encompass the entire flatland area of Fairfax (see pink area in Attachment F). The reason is the mapped ridgeline terminates only 80 vertical feet uphill from base of the steep ridge. The remaining 20 feet of vertical distance would therefore have to be taken up by the drop in elevation of the very gently sloping peneplane (flat alluvial area) extending outwards from the base

of the ridge. Taken literally, the additional 20 feet in elevation drop necessary to achieve the full 100' vertical drop from the ridgeline terminus would extend the ridgeline scenic corridor completely across the flatland portions of Fairfax (beyond into San Anselmo actually). The Elliot Preserve Ridgeline (Attachment C) is another example of a ridgeline extending into the flatland alluvial plane, and would also take the literally applied 100-foot vertical drop ridgeline scenic corridor across the entire peneplan into San Anselmo. Several other ridgelines suffer from too low a terminus to allow a literal interpretation of the 100-foot ridgeline scenic corridor.

A related problem is even the portions of the lowest 100 vertical foot drop area of Fairfax Ridge that are located on the ridgeline slope would, if applied literally per the Chapter 17.060 language, extend hundreds of feet to the sides of the ridgeline (see Attachment B for the overview and Attachment G for the closeup of this problem).

Applying Chapter 17.060 Ridgeline Development regulations to every flatland parcel in Fairfax was clearly not the intent of the ridgeline regulations. Staff would argue that even the widened ridgeline scenic corridor on Fairfax Ridge and some others created by the 100-foot vertical drop was not intended by those that wrote Chapter 17.060. If so, it would apply the stringent ridgeline scenic corridor requirements to properties at the bottom of the slope that are over 700 feet from the mapped ridgeline See Attachment G)

Attachment G also illustrates several instances where there is a 'fold' (or sub-ridge) in the slopes on a side of Fairfax Ridge where a straight line from the ridgeline would run uphill for some distance against the general, overall downward slope from the ridgeline. This again results in hundreds of feet in width being added to the ridgeline scenic corridor area within the 100-foot vertical ridgeline scenic corridor.

Options

As noted above, there are some inherent problems with attempting to apply Chapter 17.060 as currently written to identify ridgeline scenic corridors on all of the ridgelines shown in original Visual Resources Map No. 9/ Map of Visual Resources. Neither the 150-foot (300 total feet) horizontal distance or 100-foot vertical distance from ridgeline make sense. Below staff suggests several options to how these problems can be resolved.

150-foot horizontal distance

There is a relatively straightforward solution to the 150-foot horizontal scenic ridgeline corridor running into the flatlands:

- terminate the downhill end of originally drawn ridgelines so they do not extend beyond the base of the ridge.
- Circumscribe the 150-foot horizontal ridgeline scenic corridor on either side of a defined ridgeline so that it do not extend beyond the base of the slope (see the hatched area applied to the bottom of the Elliott Preserve ridgeline in Attachment C for an example of how this would be applied).

- These two changes would involve developing a modified, georeferenced map that amends the ridgeline terminuses and ridgeline scenic corridors for the six problematic ridgelines.

100-foot vertical distance

Mapping the 100-foot vertical distance ridgeline scenic corridor will require more substantive changes to either the terminuses of the mapped ridgeline, how the 100-vertical distance is defined and mapped, or both. Absent that, the 100-vertical distance ridgeline scenic corridor would put every property in the Town's peneplane into the ridgeline scenic corridor.

In evaluating options for dealing with the six problematic ridgelines (or maybe just one, if the Town uses the major watershed boundary as a major ridgeline surrogate), staff assumed that the originally mapped ridgelines and ridgeline scenic corridors provide some semblance of what the 150-foot/100-foot ridgeline scenic corridor boundaries could ultimately look like. The 150-foot (300 feet total width) horizontal boundaries follow the original mapped boundaries so closely that it appears that this width may have been used as a rough ridgeline scenic corridor delimiter in the original 1974 map.

The 100-foot boundaries are another matter. Staff questions whether a serious attempt to map these boundaries occurred, given the problems with almost half the ridgelines' 100-foot ridgeline scenic corridor boundaries running out into the flatland area of Fairfax. Furthermore, noted above for the Fairfax Ridge ridgeline (Attachment G), the 100-vertical foot ridgeline scenic corridor boundaries have a tendency to widen at the bottom of the ridge, which would seem to be the opposite of what would be desired with a ridgeline development regulation - properties are located higher on a slope are more visible and hence development there is more of a visual concern than those properties located at the ridge bottom.

Staff has identified the following options for addressing the problems created by the original mapped ridgeline downhill terminuses as applied to the 100-foot vertical boundary:

- 1) Measure the 100-vertical foot ridgeline scenic corridor perpendicularly to the designated ridgeline at any point on the ridge. Staff has done this in Attachment G. This would apply a common basis for measuring the the 100-foot vertical and the 150-foot horizontal ridgeline scenic corridor.
- 2) Related to 1) above, eliminate from inclusion in the 100-vertical foot ridgeline scenic corridor any area beyond the first fold/subridge away from the designated ridgeline. The presence of a "fold" would be determined by whether the topography proceeds uphill when viewed perpendicular to the designated ridgeline.

This would avoid stretching the 100-vertical foot ridgeline scenic corridor hundreds of feet beyond the designated ridgeline where the ridgeline becomes more of an undulating hillside (such as Fairfax Ridge as drawn in Attachment G). Staff stopped the 100-foot ridgeline scenic corridor drawn in Attachment G at the

bottom of the first gully past an upward rising subridge. Staff recommends taking this a step further and terminating it at the top of the first subridge past the delineated ridge.

- 3) Select a point further up each of the six ridges where the 100-vertical foot ridgeline scenic corridor otherwise extends into the flatlands to terminate the downhill end of 100-vertical foot ridgeline scenic corridor. The point(s) would obviously have to be 100 feet or more above the bottom of the ridge slope. For example, as shown on Fairfax Ridge in Attachment G, the horizontal and vertical ridgeline scenic corridors come together at approximately elevation 370', and that could be selected as the downhill terminus of the ridgeline for purposes of applying the 100-vertical foot drop.

The ridgeline for purposes of applying the 150/300-foot ridgeline scenic corridor and the historic ridgeline scenic corridor would continue to be measured where they currently exist.

This approach has the advantage of eliminating the 100-foot vertical drop ridgeline scenic corridor extension into the flatlands. A higher ridgeline terminus would also address the issue of the widening of the ridgeline scenic corridor at the bottom of the ridge.

- 4) Designate as "major ridgelines" only those ridges that bisect major drainages as shown on the Surface Hydrology Map (as shown in Attachments E and F). This would result in only having to fix the 100-foot vertical ridgeline scenic corridor boundaries on Fairfax Ridge, but would also eliminate the 100-foot vertical drop on ten other defined ridgelines.
- 5) Apply 100-vertical foot ridgeline scenic corridors only for the seven designated ridgelines within Fairfax that do not currently have the 100-vertical foot and 150/300-horizontal foot corridors running off into the flatland peneplane.

Conclusion/Recommendation

As can be seen from the above discussion and options, comprehensively resolving the original six-ridge mapping errors in relation to the 100-vertical foot ridgeline scenic corridor seems to be a major undertaking. If the Commission cannot develop a consensus on any of the options for addressing this problem, staff recommends mapping the seven ridges where a 100-vertical foot ridgeline scenic corridor can be mapped without problems, and taking that map, along with the 150/300-foot horizontal corridor, and the georeferenced historic ridgeline scenic corridor maps, forward for adoption and application in Zoning Chapter 17.060. Failure to do so in the near future will result in inability to apply either the 100-vertical foot or 150/300-foot horizontal foot ridgeline scenic corridors to developments.

As will be discussed elsewhere in tonight's agenda, the Town has major upcoming work programs involving housing and historic district/Objective Design and Development Standards. If the Commission believes that the 100-vertical foot ridgeline scenic corridor regulations should (eventually) be applied to all six problem ridgelines, this work may have to be balanced against these other priorities.

Staff requests Commission direction on the following:

- Should Zoning Chapter 17.060 be amended to include a reference to the georeferenced version of the 2010-2030 General Plan “Map of Visual Resources”?
- Should Zoning Chapter 17.060 be amended to include a digitized, georeferenced 150/300’ horizontal Ridgeline Scenic Corridor map, with accompanying text eliminating extending the 150/300’ corridor into the flatland?
- Should Zoning Chapter 17.060 include language to clarify that all maps shall be used cumulatively such that the areas within Ridgeline Scenic Corridor will be based on whatever map applies to the greatest corridor area to the property?
- What option should be selected to address, even if on an interim basis, the problems associated with trying to apply the 100-vertical foot ridgeline scenic corridor?

ATTACHMENTS

Attachment A – Georeferenced Visual Resources Map No. 9/(Map of Visual Resources)

Attachment B – Fairfax Ridges 100’ and 150’ Distance from Ridgelines

Attachment C – Elliott Preserve Ridge Closeup

Attachment D - 150’ horizontal distance and Georeferenced Visual Resources Map No. 9

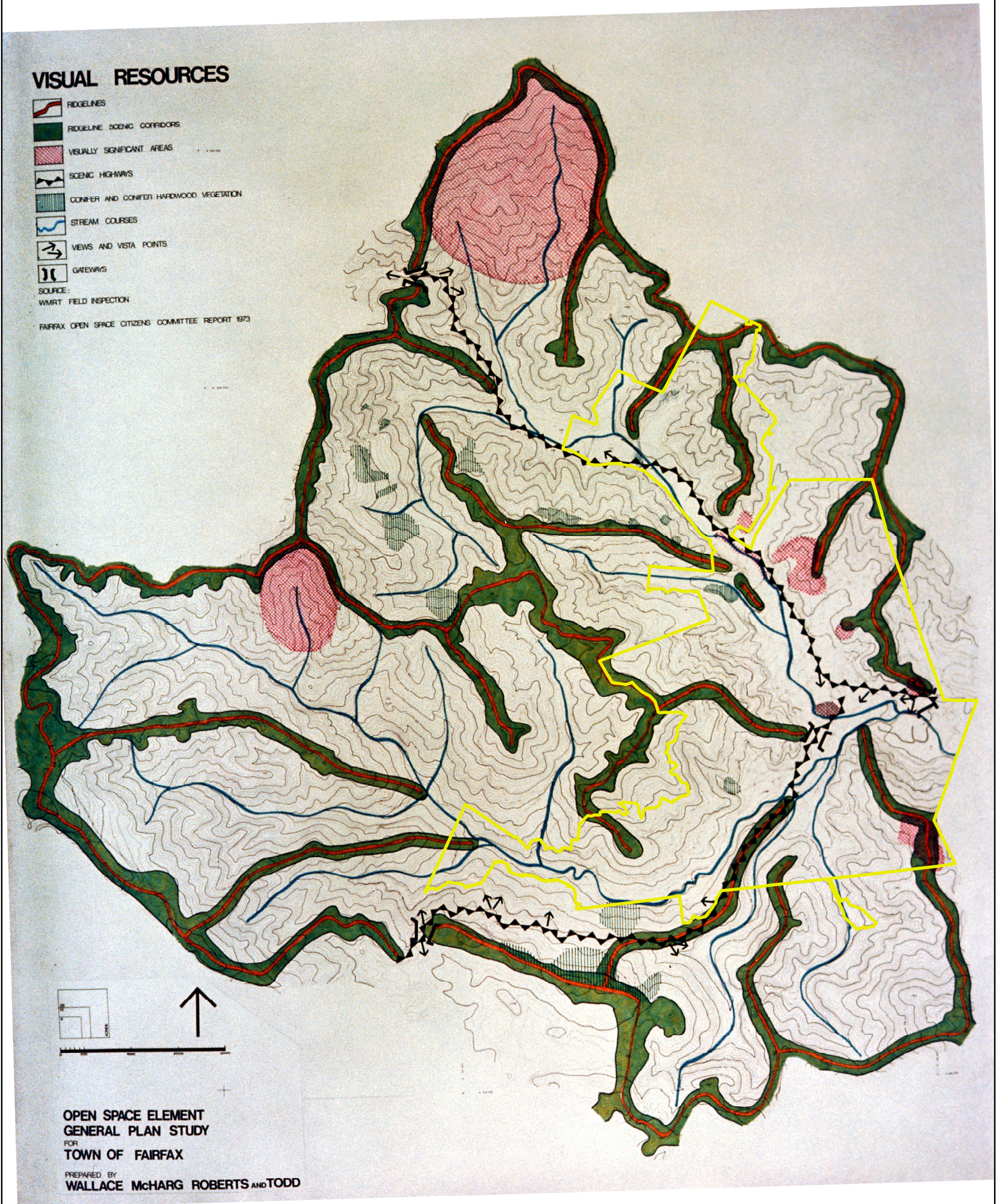
Attachment E – 1974 Surface Hydrology Map


Attachment F – Fairfax Major Ridgetip Area Included in 100 Foot Vertical Drop

Attachment G – Fairfax Ridge closeup with 150’ horizontal and 100’ vertical distances

Visual Resources Map No 9

July 16, 2020



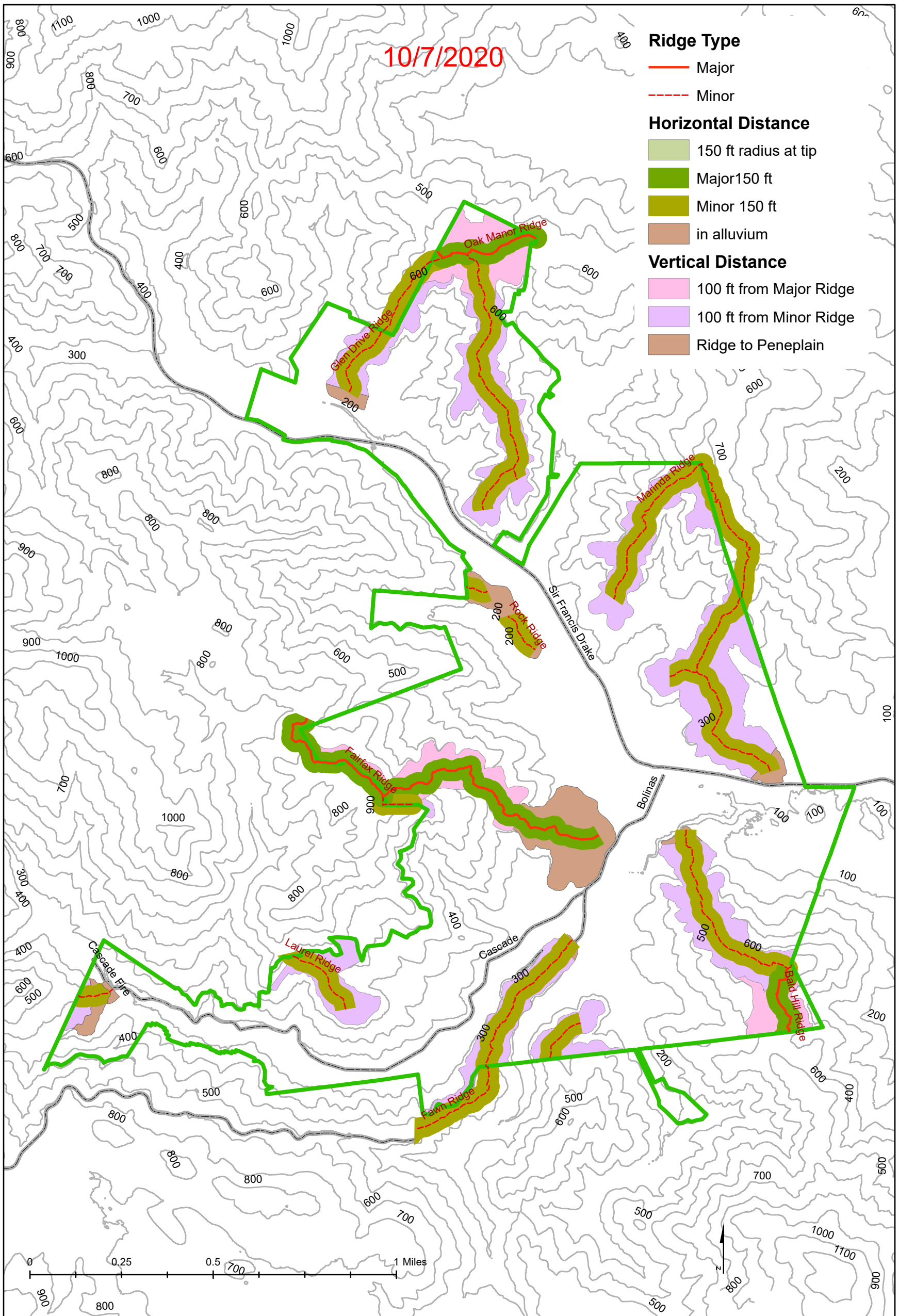
 Town of Fairfax

0 0.5 1 2 Miles

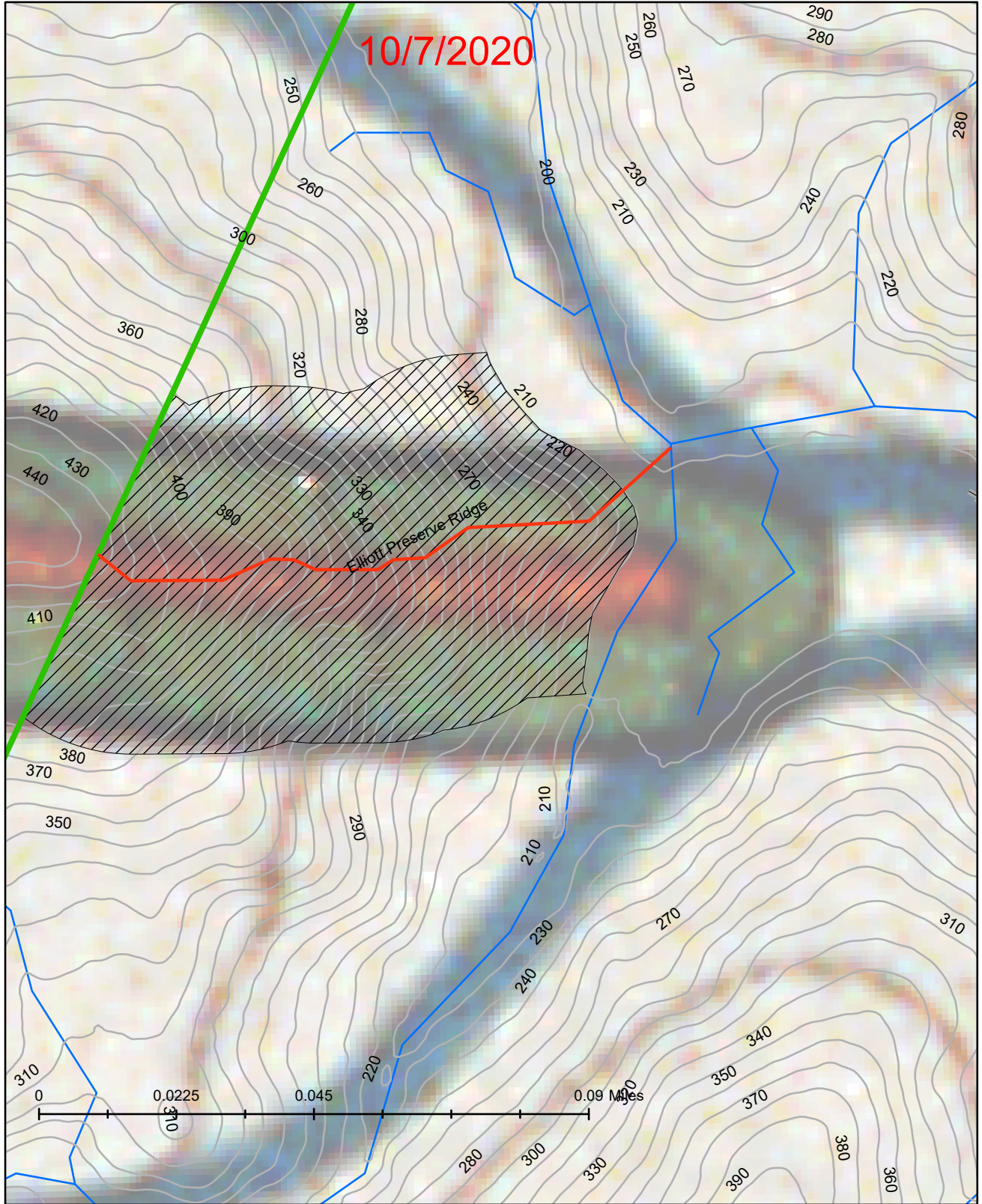


Fairfax Ridges

150 Foot Horizontal Distance and 100 Foot Vertical Distance From Ridgelines

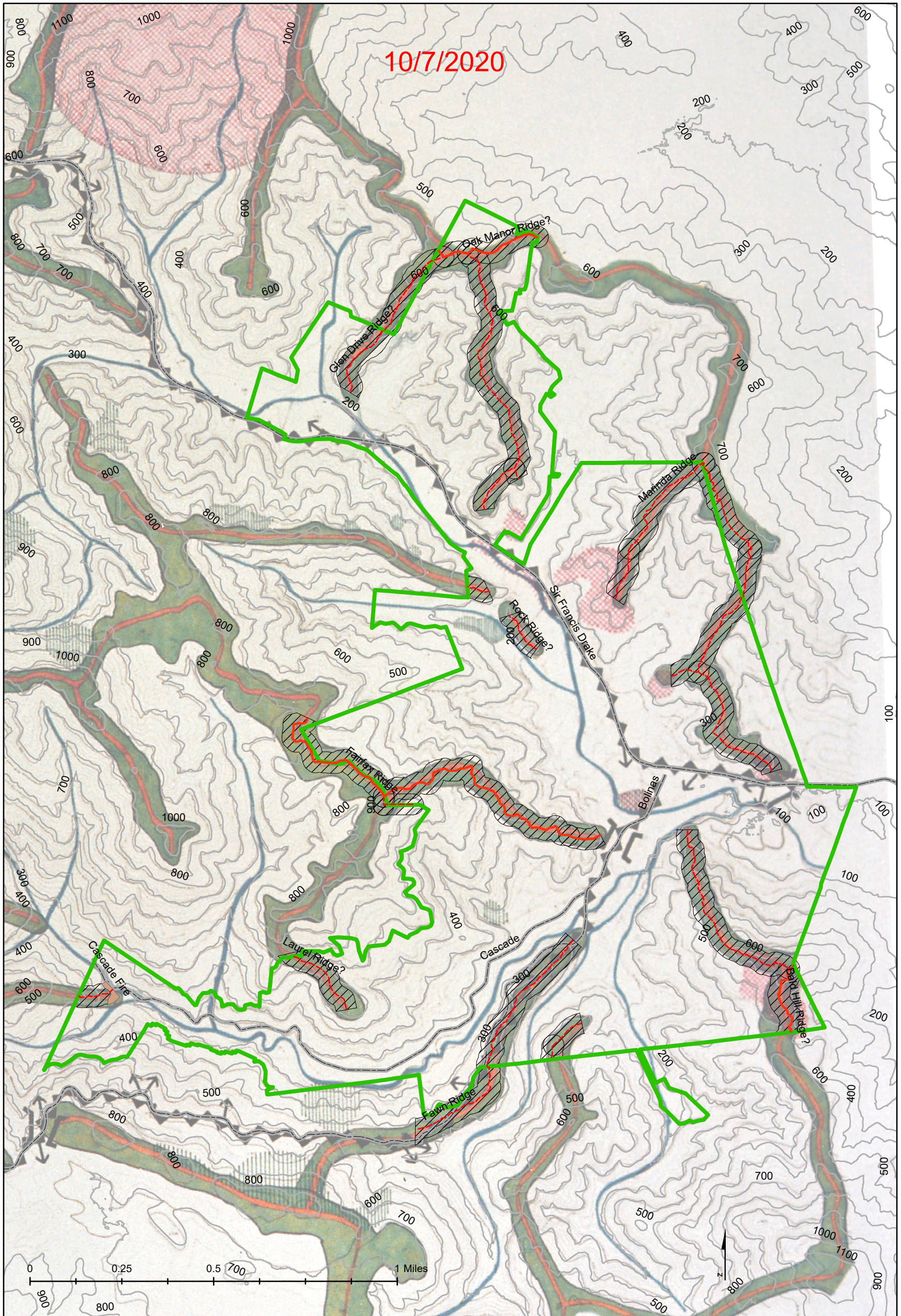


**Elliot Preserve Ridge Close up
150 Foot Horizontal Distance from
Ridgeline to Peneplain and
1974 Visual Resources Map No. 9 (georeferenced)**



ATTACHMENT C

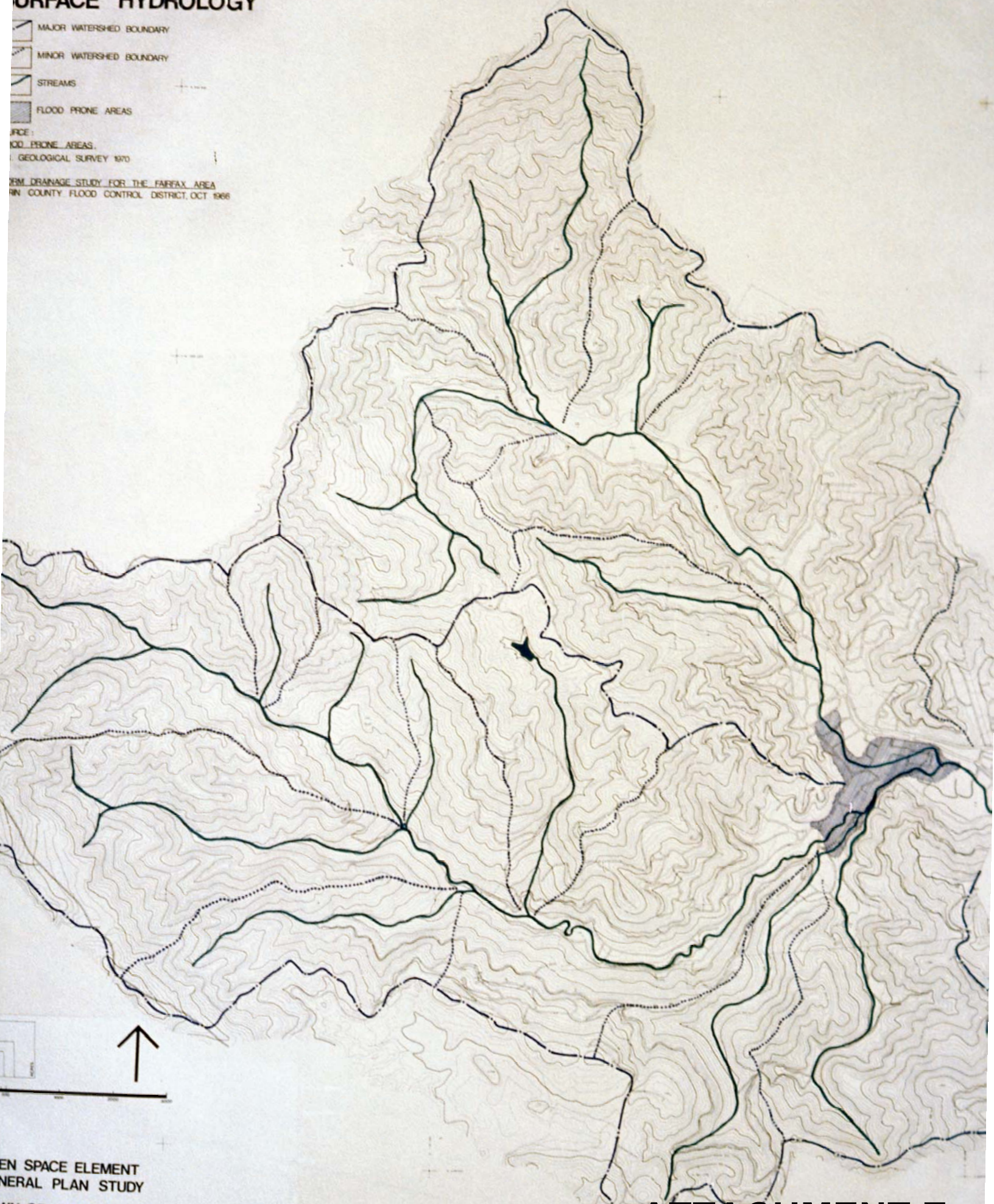
Fairfax Ridges 150 Foot Horizontal Distance and Georeferenced 1974 Visual Resources Map No. 9



SURFACE HYDROLOGY

- MAJOR WATERSHED BOUNDARY
- MINOR WATERSHED BOUNDARY
- STREAMS
- FLOOD PRONE AREAS

SOURCE:
FLOOD PRONE AREAS
U.S. GEOLOGICAL SURVEY 1970
WATER RESOURCES DIVISION
WATER DRAINAGE STUDY FOR THE FAIRFAX AREA
FAIRFAX COUNTY FLOOD CONTROL DISTRICT, OCT 1966

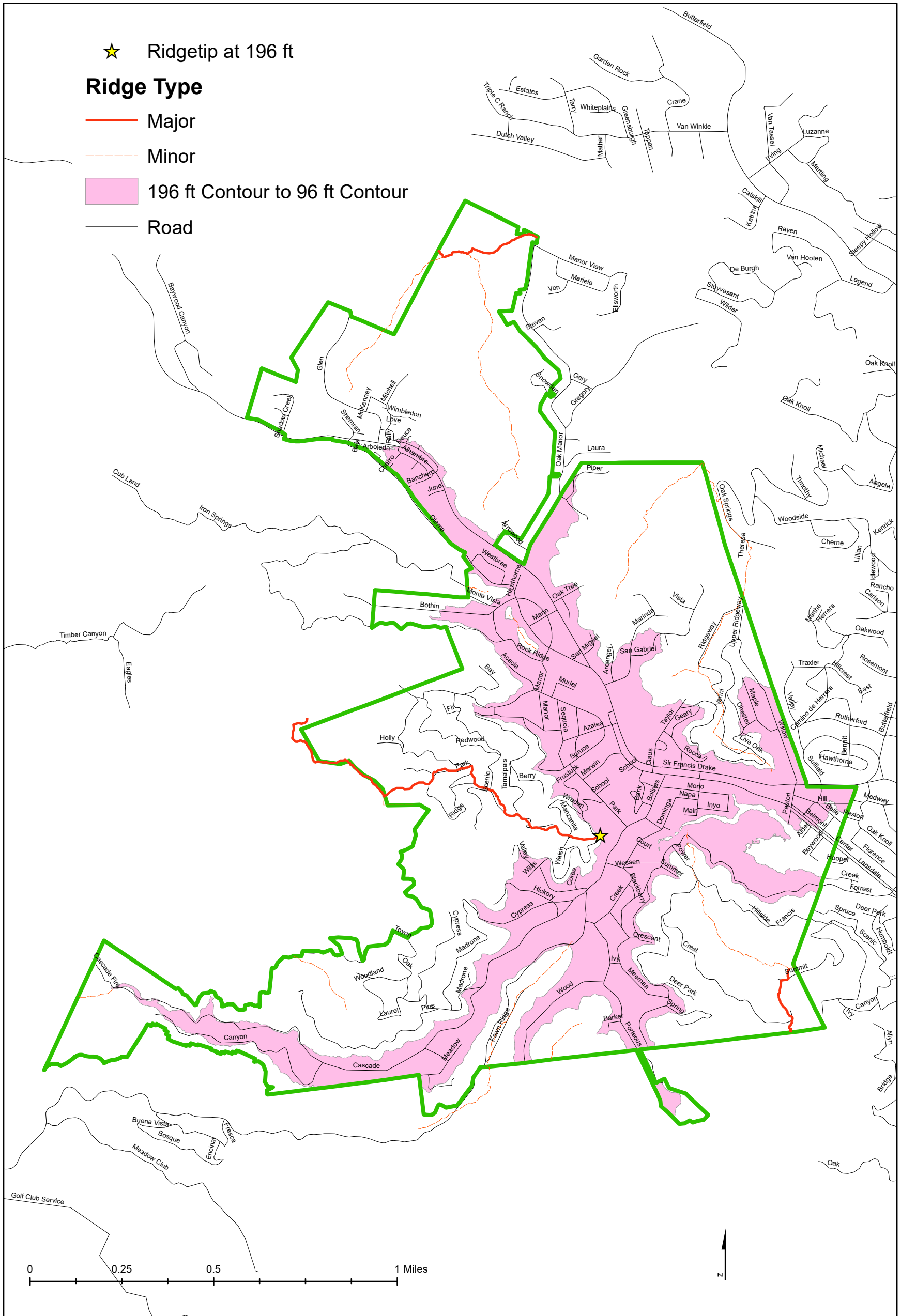


OPEN SPACE ELEMENT
GENERAL PLAN STUDY
TOWN OF FAIRFAX
DESIGNED BY
MALLACE MCHARG ROBERTS AND TODD

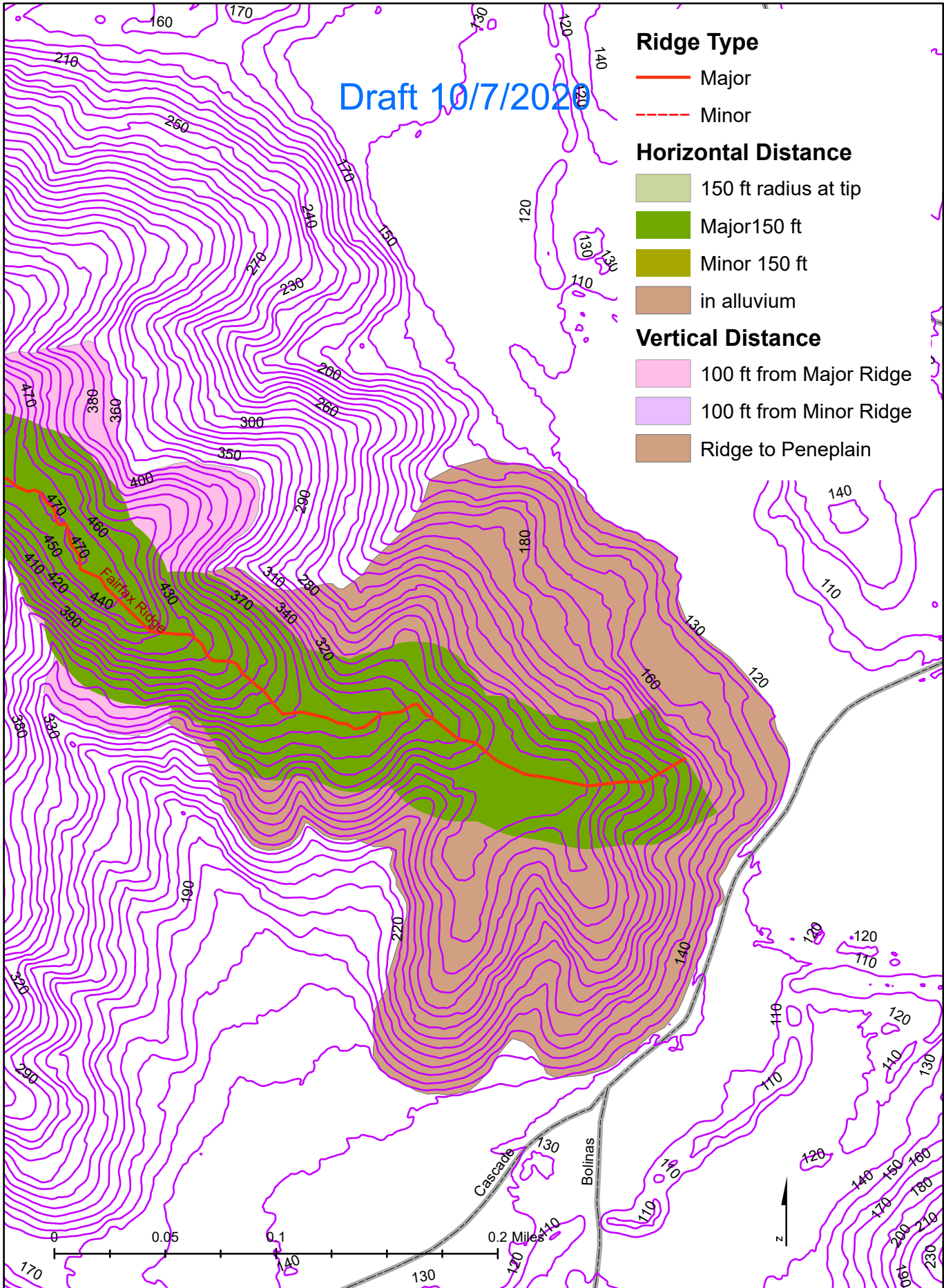
ATTACHMENT E

Fairfax Major Ridgetip Area Included in 100 Foot Vertical Drop

September 30, 2020



Fairfax Ridgeline Closeup 150 Foot Horizontal Distance and 100 Foot Vertical Distance From Ridgelines



ATTACHMENT G