APPENDIX F – EXISTING AND POTENTIAL REGIONAL FLOOD STORAGE METHODOLOGY

Methodology:

Existing Regionally Significant Storage Locations (RSSLs) are defined as depressional areas that already provide significant storage of flood waters and stormwater runoff. Potential RSSLs include existing non-regionally signficant storage locations that could be modified to provide significant storage of stormwater runoff, non-depressional areas (e.g., flat open spaces) that could be excavated and/or bermed to provide significant storage of stormwater runoff, and existing RSSLs that could be modified to provide additional storage of stormwater runoff.

Floodplain maps, topographic data, Flood Problem Area Inventory (FPAI), land use mapping, and aerial photos are used to identify and map regionally significant flood storage areas in the watershed. Areas of regional storage creation or enhancement are defined using the methods below.

Methods for Identifying Existing RSSLs:

- Existing storage locations are identified by evaluating all agricultural, forest and grassland, public and private open space, and water parcels, excluding lakes. Parcels that are less than 5 acres in size are excluded from the analysis.

- Only locations that are greater than 25 acres in size (these locations can sis. The tributary drainage area to each storage location is estimated based on a cursconsist of a combination of contiguous or adjacent parcels meeting the definition above) and that have at least 100 acres of tributary drainage area are included in the analyory review of topographic mapping; detailed subbasin delineation is not performed.

- For an existing storage location meeting the criteria above, the existing storage volume was calculated with the following method. The normal water elevation was set equal to the lowest spot elevation or contour in the identified area. The high water elevation was assumed to be equal to the base flood elevation for storage areas adjacent to or within the floodplain. For areas not located near floodplains, the high water level was set equal to the highest existing contour or spot elevation within the storage area. Incremental storage volume was computed by multiplying the average area between successive known elevations (spot grade or contour) by the difference in elevation, starting at the normal water elevation and continuing to the high water elevation. The cumulative storage volume for a storage location was calculated by adding up the incremental storage volumes.

- Existing Regionally Significant Storage Locations (RSSLs) are those existing storage locations that provide at least 50 acre-feet of storage.

- Existing storage locations that do provide a minimum of 50 acre-feet of storage are identified as existing non-regionally significant storage locations.

Methods for Identifying Potential RSSLs:

- Potential storage locations are determined by evaluating all locations that meet the criteria for existing storage locations (5 acre parcel, 25 acre location and 100 acre tributary area minimums), except that the locations containing mapped wetlands included in the Lake County Wetland Inventory Lake County Wetland are excluded, due to permitting issues with constructing flood storage within existing wetlands.

- Any existing storage locations that can potentially be modified (e.g., excavated, bermed) to provide at least 50 acre-feet of storage are identified as a potential RSSL, assuming they do not contained mapped wetland areas.

- Any existing non-depressional areas that can potentially be modified (e.g., excavated, bermed) to provide at least 50 acre-feet of storage are identified as a potential RSSL, assuming they do not contained mapped wetland areas.

- Any existing RSSLs that do not contain mapped wetlands and that can potentially be modified (e.g., excavated, bermted) to provide additional storage volume are also identified as a potential RSSL. These are candidate project sites to augment the storage that they are already providing and are to be evaluated on a case by case basis.

- When analyzing the storage volume to be provided by a potential storage location, the following method was used. The normal water elevation in a potential storage location was set equal to the lowest spot elevation or contour elevation of the adjacent downstream receiving water that allows the storage location to gravity drain. The high water elevation was assumed to be equal to the base flood elevation for storage locations adjacent to or within the floodplain. For potential regional storage locations not adjacent to floodplain, the high water level was set equal to the highest existing contour or spot elevation within the storage location unless site conditions allow the topography to be modified to raise the highest contour or spot elevation. If the installation of berms is used to create storage, the berms can not be any higher than 2 feet above the existing topography, and the additional created storage volume must be contained completely within the potential storage location. Incremental storage volumes are computed by multiplying the average area between successive known elevations (spot grade or contour) by the difference in elevation, starting at the normal water elevation and continuing to the anticipated high water elevation. The cumulative storage volumes for a storage location are calculated by adding up the incremental storage volumes.

- Potential Regionally Significant Storage Locations (RSSLs) are those existing storage locations that could provide at least 50 acre-feet of storage.

- Potential storage locations that could not provide at least 50 acre-feet of storage are identified as potential non-regionally significant storage locations.