Section 7 - Glossary

Alluvial Fan
The broad, flattened connate alluvial deposit, usually situated at the base of a steep slope (San Juan Mountain Uplift) or at the mouth of a valley.

Approximate Floodplains
Approximate Floodplains are developed using approximate techniques such as delineation according to geomorphic features, based on historic floods or assumed depth procedures. Topographic mapping is often less detailed, and often, no hydrology has been developed to support the floodplain delineation.

Anastomosing
An interwoven pattern of flow lines developed by running water in distinct channels. An anastomosing channel system is a system of interlaced channels. Also called multiple thread channels.

Avulsion
Rapid change in flow path from one channel to a parallel channel in a distributary or alluvial fan system.

Bendway Weir
An upstream-angled low elevation stone sill which is designed to control and redirect currents and velocities throughout the channel bend.

Bioengineering
The use of structures in combination with biological elements to arrest and prevent failure and erosion. Such structures could include the use of organic-based materials such as root wads, willow cuttings, plantings, wooden vanes as well as manufactured materials such as geosynthetics. Often times strategically placed rock falls under the definition of bioengineering.

Cadastral
Cadastral data is spatial information regarding land ownership.

Coordinate reference system
A system for relating coordinate "map" values to spatial "real-world" locations. GPS units often produce coordinate locations as an angle from a datum (latitude/longitude). For mapping, angular coordinates are often transformed, or projected, to a length from a datum in the north and east directions on a geodetic or plane surface.

Cutoff
Abandonment of oxbow or tight channel bend during high flows by short-cutting the bend.

Detailed Floodplain
Detailed floodplain delineations are prepared using topographic base mapping, a hydrologic analysis and a hydraulic analysis to develop detailed water surface elevations and floodplain extents.

Digital Ortho-photo Quads (DOQQs)
DOQQs are grey-scale aerial photographs that have been digitized, ortho-rectified, and cut to the same size as the USGS quadrangle maps.

Digital Raster Graphs (DRGs)
Digital Raster Graphs are digitized raster images of the USGS topographic quadrangle maps. These quad maps have been geo-referenced within a coordinate reference system.

False Color Infrared Image (FCIR)
A False Color Infrared Image is a composite of multi-spectral data that mimics color infrared photography. Multi-spectral sensors such as the Thematic Mapper (TM) sensor of the Landsat satellites measure the reflectance intensity of many different wavelength bands across the visible and thermal spectral regions. In order to view this data as a color image, spectral bands must be displayed using the blue, green, and red principal colors of the visible spectrum. To mimic color infrared film photography, an image is constructed by assigning sensed green levels (TM2) as the color blue in the composite image, red (TM3) as the color green, and near infrared (TM4) as the color red. As healthy growing vegetation is highly reflective of near-infrared radiation, vegetation appears as red in an FCIR image.

Flood Insurance Rate Maps (FIRM)
The Official flood insurance maps of a community by which the Administrator has delineated both special hazard areas and the risk premium zones applicable to the community. FIRMs can contain both detailed an approximate floodplain delineations.

Flood Insurance Study (FIS)
Flood Insurance Studies investigate the existence and severity of flood hazards, and contain text which documents the area studied, engineering methods, floodplain management applications, insurance applications and other data. This includes background hydrology and hydraulics, flood profiles, and Floodway maps. FIRMs can be published separately or incorporated by reference, but correspond directly to the FIS.

Floodplain
The term "floodplain" has slightly different meanings when used in terms of geomorphology and floodplain regulation. On a geomorphology basis, the floodplain is a depositional feature along the river formed from a combination of within channel and overbank sediment deposition. On a regulatory basis, the floodplain is an area that is inundated by water for given recurrence interval flood events.

Flow Duration Curve
A flow duration curve is an indication of the frequency of a given discharge occurring during a given time period. A daily flow duration curve shows the probability that a given discharge will occur during a given day.

Georeferencing
The process of locating a digital image within a coordinate reference system using a set of control points.

Geographical Information System (GIS)
A Geographical Information System is a computer software system used for the purpose of input, storage, retrieval, analysis, and display of interpreted spatially distributed information. With GIS, real world features can be represented, located, and stored on a computer within a global coordinate system and grouped within collections called layers, coverages, or themes. These representations can be displayed and printed as maps. Information about a feature is tied directly to its spatial representation using a database. The unique capability of a GIS is to be able to analyze questions about the spatial or information relationships of various features or themes using queries.

Global Positioning System (GPS)
The Global Positioning System enables an object in the field to be located within a global coordinate referencing system such as latitude/longitude. A field GPS unit detects the distance to a set of GPS satellites and calculates its position within a specified geodetic referencing system using intersection.

Grade Control Structure
An in-channel structure constructed of rock or other materials, the purpose of which is to establish a stable channel gradient or hold the channel profile in place. It can be designed to dissipate excess energy and is typically situated where the channel gradient without such control would continue to adjust and ultimately become too steep, resulting in erosive velocities.

Image resolution
A digital raster image must be stored and displayed using a grid of square pixels. An individual pixel is assigned one color value, and details smaller than the pixel cannot be distinguished. With a spatial image, the size of this pixel represents a certain length and width of land. Therefore, the resolution of an image is the length scale at which details within an image can be distinguished, and corresponds to the length and width of land that one image pixel covers. The image resolution is often the same or slightly larger than the resolution of the sensing instrument (i.e. a photographic camera and digital scanner or a satellite sensor) unless it has been reduced due to computer memory requirements.

Live Thread
In the case of the Rio Grande, the live thread is the active river channel in a multiple thread system. It is maintained as an active thread to meet irrigation diversion requirements. The dormant system are the inactive channels adjacent to the live thread which see water on a frequent basis through overbank flooding or irrigation diversion. Portions of this dormant system are typically classed as “abandoned channels”, “oxbows” and “sloughs”.

Meander Migration
Shift in position of channel meander (bend) due to long-term processes of bank erosion and bar deposition.

Raster Image
An image represented by a grid of colored pixels. This is in contrast to an image that could be constructed from a set of line vectors.

Recurrence Interval
Hydrology calculations are often expressed in terms or recurrence intervals, or the probability that a given discharge will be met or exceeded on average once during a specified number of years. A 100-year recurrence interval event (or 100-year discharge) has one percent chance (once per 100 years) of occurring during any one year.

Thalweg
The primary flow path within the river channel. This is typically a line (minimum elevation) representing the low flow portion of the channel.