

























Chatfield Land Use Memo

Land use is an important input for the HSPF model as it determines the foundation of the pervious or impervious land within a watershed. In the Chatfield watershed model kick-off meeting it was decided to use the CWA land use data, which consisted of land uses from Douglas County, Jefferson County, the Town of Castle Rock, and El Paso County. However, as this land use map was compared to the NLCD 2011 land use map (and aerial imagery), it was found that many portions did not adequately represent the watershed's true conditions. It was determined that the NLCD 2011 land use should be used for the model, and updated in growing urban areas to best reflect land use in 2015. Specifically, parts of the Town of Castle Rock will need to be updated in the NLCD 2011 layer to reflect the correct land use provided by the CWA. Four examples of differences between the CWA land use, NLCD 2011 land use and aerial imagery are shown in the following pages. The legends for the CWA and NLCD land uses are shown below, respectively. It should be noted that the NLCD land use datasets are the *standard*, when building hydrologic models.

Land Use Types

	Agricultural
	Commercial
	Forest
	Industrial
	Mixed Use
	Open Space
	Other
	Other Incorporated Towns
	Residential

NLCD Land Cover Classification Legend

	11 Open Water
	12 Perennial Ice/ Snow
	21 Developed, Open Space
	22 Developed, Low Intensity
	23 Developed, Medium Intensity
	24 Developed, High Intensity
	31 Barren Land (Rock/Sand/Clay)
	41 Deciduous Forest
	42 Evergreen Forest
	43 Mixed Forest
	51 Dwarf Scrub*
	52 Shrub/Scrub
	71 Grassland/Herbaceous
	72 Sedge/Herbaceous*
	73 Lichens*
	74 Moss*
	81 Pasture/Hay
	82 Cultivated Crops
	90 Woody Wetlands
	95 Emergent Herbaceous Wetlands

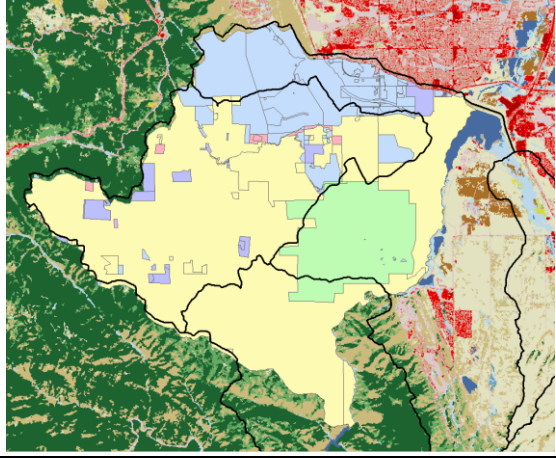
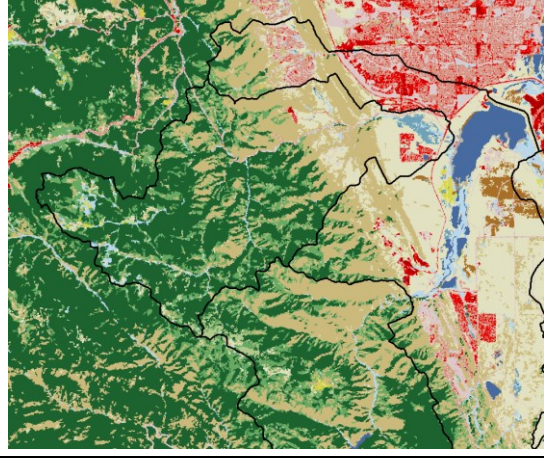

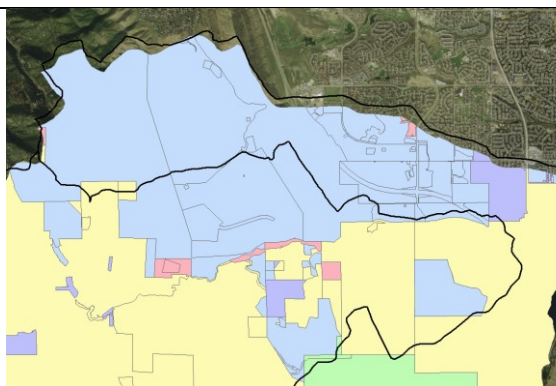
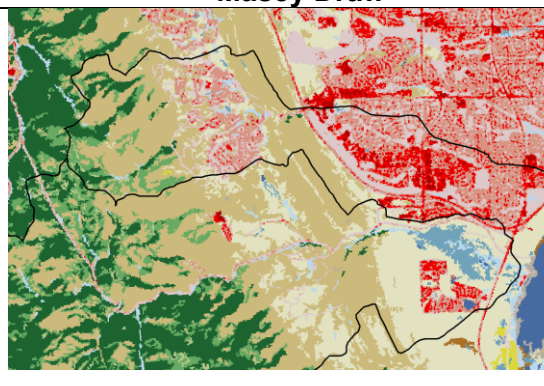
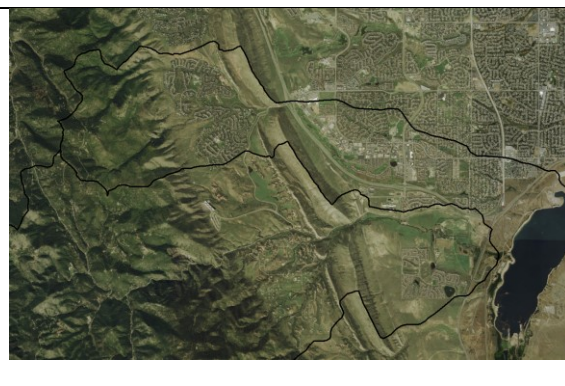
* Alaska only

CWA Land Use	NLCD 2011 Land Use
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October 22, 2015

In the northern reaches of the Chatfield watershed, the CWA land use labels forested and shrubs as “agricultural” land use, which does not adequately capture the infiltration properties of this region. The large green section in the CWA land use map is “industrial”, while the aerial imagery shows this is shrubs and forest with some development closer to Chatfield Reservoir. The NLCD land use captures these distinctions more closely.

In the Masey Draw catchment, the CWA land use lists nearly the entire area as “mixed use”, while the NLCD lists it as sections of shrub land use interwoven with developed residential. The NLCD land use captures the aerial imagery.

Jefferson County Land Use	NLCD 2011 Land Use	Aerial Imagery
Northern Chatfield Watershed		
		
Masey Draw		
		

October 22, 2015

These figures show further differences between the CWA land use and the NLCD 2011 land use. In the west Plum Creek watershed, the CWA land use has a coarse representation of “forested” and “agricultural” lands. The NLCD captures the proper extent of the “forested land” as well as the transition to shrub and grassland, while depicting the agricultural operation as dark brown.

In Castle Rock, the NLCD shows the “forested land” on the eastern boundary of the watershed as such, while the CWA land use designates this as “agricultural land”. The aerial image confirms this is forested and shrub land. On the left side of the image the NLCD designates some of the newer developments in Castle Rock as grassland rather than residential. This will have to be updated on the NLCD dataset as it is likely from a newer development.

