

Alternatives 7a and 7b would create the least impacts resulting in habitat fragmentation and would fragment 930 ha and 790 ha (2,300 and 2,000 ac), respectively, of contiguous natural area. Construction of 7a and 7b would involve building new roads through the hills from Winchester to Sun City that support isolated stands of coastal sage scrub habitat. The habitat blocks are, on average, 132 ha (325 ac). These alternatives are mainly within existing agricultural lands.

#### 4.11.2.8 Other Land Uses

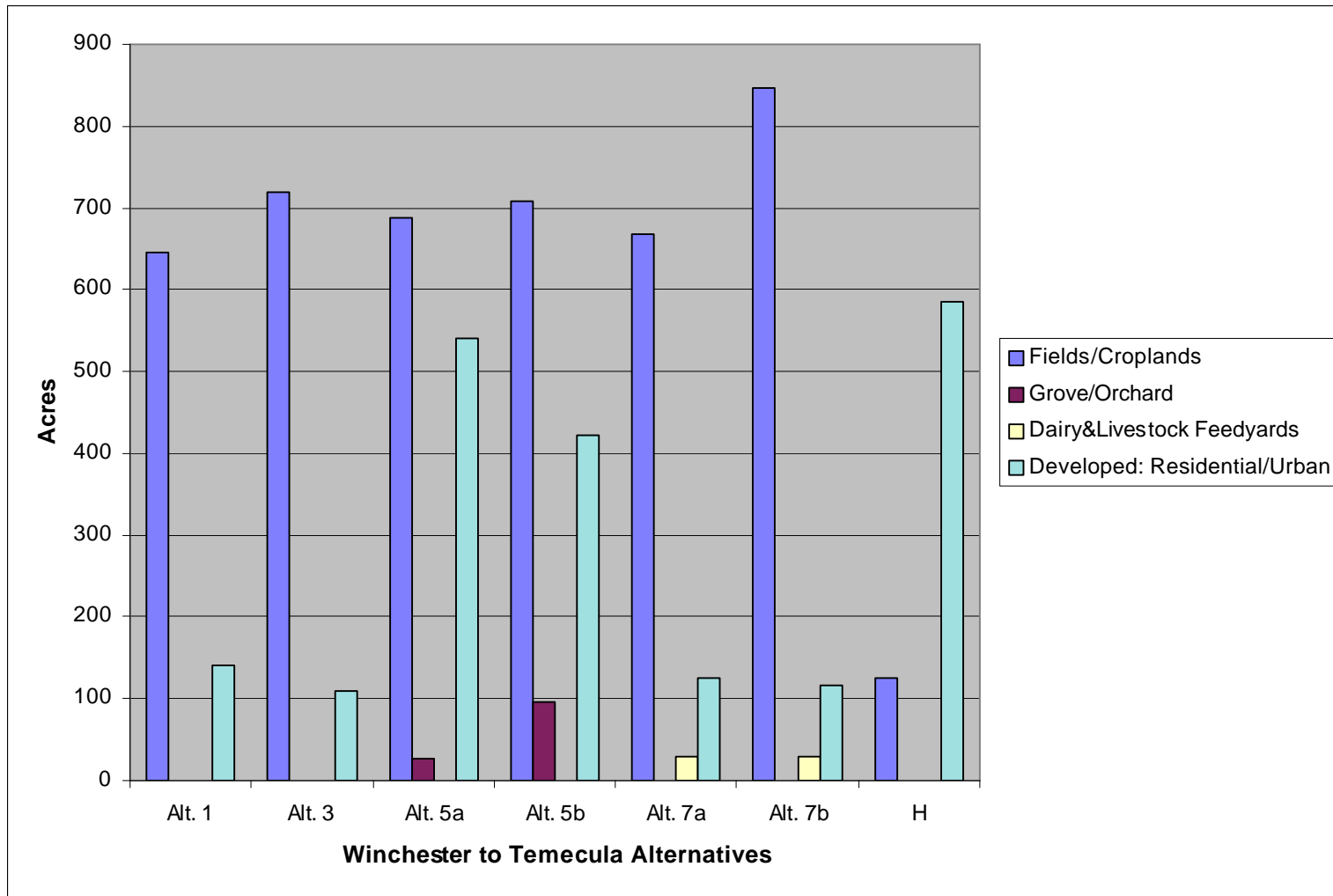
Figure 4.11.10 illustrates the comparative amounts of other land uses within the WT alternatives. These land uses include fields/croplands, grove/orchard, dairy and livestock feed yards, and urban development. Agricultural areas (cropland, orchard, feed yards) occur predominantly within Alternatives 5a, 5b, and 7b ranging from 289 to 354 ha (714 to 875 acres). The alternatives with the next greatest amount of impacts to agricultural areas are Alternatives 1, 3, and 7a at 261 to 281 ha (646 to 695 acres). Alternative H encompasses the least amount of agricultural land at 51 ha (126 acres). Most of the alignments of Alternatives 1, 7a, and 7b are surrounded primarily by agricultural lands.

The longest alternatives encompass the greatest extent of developed area. Alternatives H, 5a, and 5b include 237, 219, and 171 ha (586, 541, and 423 acres). The majority of the developed land is adjacent to I-215 and in the Murrieta and Temecula Valleys. The remaining alternatives encompass 45 to 57 ha (110 to 141 acres).

#### 4.11.2.9 Qualitative Evaluation of Watershed-Scale Effects

The following summarizes a watershed-scale evaluation of the potential impacts by the various WT Corridor alternatives. A separate technical study has been prepared for this evaluation: “Winchester to Temecula Corridor Qualitative Evaluation of Watershed-Scale Effects” (LSA, 2002). This study is available for review with the other technical reports for the EIS/EIR. Refer to this report for further detail regarding the methods and results of the evaluation. For the purpose of this evaluation, riverine functions that are directly related to the support of biological components of the natural ecosystem (i.e., flora and fauna) are considered hydro-biological functions. The evaluation is based on the premise that in a natural setting the hydro-biological functions of the riverine system increase as the stream order increases. The actual manifestation of the hydro-biological functions is inversely proportional to the extent of land development and the associated intensity of that land use through which the stream passes. The higher the functionality of the hydro-biological functions the greater the value to society. Therefore, the impacts to the higher order streams, with well developed and diverse habitats, are considered to be greater impacts than those to the lower order streams with lower levels of hydro-biological functions. Likewise, impacts to streams that remain in a natural setting, or remain in a largely natural setting, would be expected to have a greater impact to hydro-biological functions than on a stream impacted by urban or agricultural uses. Consequently, impacts to highly functional areas along or in natural settings are more likely to have adverse effects at a watershed-scale than are impacts to lower order streams or streams in developed settings.

Figure 4.11.10 - Other Land Uses Within WT Alternative



**Methods.** The WT Corridor lies within the Santa Ana River and Santa Margarita River watersheds. These large watersheds are divided into smaller sections by internal surface water drainage areas and groundwater basins (Santa Ana Regional Water Quality Control Board, 1995). These smaller sections are known as Hydrologic Sub Areas (HSAs).

The Landscape Study Area of the project was defined by the outer boundaries of the HSAs that are crossed by the proposed WT Corridor (Figure 1, Appendix E). To determine conditions within the HSAs that influence the hydro-biological functions of the riverine habitat system, each HSA was examined using maps, aerial photos, and Geographic Information System (GIS) software.

The HSA conditions evaluated were:

- C Extent of development, natural lands, and agricultural uses.
- C Stream orders of the United States Geologic Survey (USGS) blue-line streams within the Landscape Study Area (USGS 1:100,000 scale map data [Horton method of classifying stream order and drainage density]).
- C Continuity of unmodified stream systems.
- C Locations of channel modifications.
- C Locations and types of riparian and upland vegetation.
- C General topographic features.

Using these data, the HSAs were assessed for potential watershed effects from the proposed alternatives based on the route locations within natural, agricultural, and urban settings.

Four distinct watershed-scale hydro-biological functions (modified functions from Brinson, et al., 1995) are identified as part of this qualitative evaluation and include:

- C **Maintain Characteristic Plant Community** - Species composition and physical characteristics of living plant biomass. The emphasis is on the dynamics and structure of the plant community as revealed by the species of trees, shrubs, seedlings, saplings, and herbs, and by the physical characteristics of the vegetation.
- C **Maintain Characteristic Detrital Biomass** - The process of production, accumulation, and dispersal of dead plant biomass of all sizes. Sources may be on site or upslope and upgradient.
- C **Maintain Interspersion and Connectivity** - The capacity of a riverine system to permit aquatic organisms to enter and leave the system via permanent or ephemeral surface channels, overbank flow, or unconfined hyporheic gravel aquifers. The capacity of the riverine system to permit access of terrestrial or aerial organisms to contiguous areas of food and cover.
- C **Maintain Spatial Structure of Habitat and Associated Diversity of Wildlife** - The capacity of the riverine system to maintain the density and spatial distribution of wildlife populations and guilds.

**Results.** Overall, the portions of the WT Corridor alternatives north of SR-79 South have a low potential level for impacts to the hydro-biological functions of the streams

due to the highly disturbed condition of the area by urban and agricultural activity. The level of impacts to the hydro-biological functions by the alternatives south of SR-79 South is generally higher than those to the north of SR-79 South.

The WT Corridor alternatives are briefly summarized below and evaluated as to the level of their impacts to the hydro-biological functions within the alternatives. Following the bulleted summaries, the alternatives are placed into three categories (high, moderate, and low) based on their overall potential for watershed-scale impacts to the hydro-biological functions.

The WT Corridor alternatives are ranked below in order from low to high in terms of potential impacts to the hydro-biological functions on a watershed scale.

- C **Alternative 7a** has a low potential to impact the hydro-biological functions of the riverine system on a landscape scale.
- C **Alternative 7b** has a low potential to impact the hydro-biological functions of the riverine system on a landscape scale. But Alternative 7b has a high potential for local impacts associated with the potential loss of vernal pool resources located within the proposed alternative.
- C **Alternative H** has a low potential to impact the hydro-biological functions of the riverine system because it follows existing major roads. This alternative has a medium potential to interrupt the hydro-biological functions of the riverine system where it crosses Paloma Creek.
- C **Alternative 1** has a low potential to impact the hydro-biological functions of the riverine system in urban and agricultural areas. This alternative has a medium potential to interrupt the hydro-biological functions of the riverine system within the Warm Springs Creek linkage between the Antelope Hills natural block and the Bachelor Mountain natural block.
- C **Alternative 3** has a low potential to impact the hydro-biological functions of the riverine system in urban and agricultural areas. This alternative has a medium potential to interrupt the hydro-biological functions of the riverine system within the Warm Springs Creek linkage between the Antelope Hills natural block and the Bachelor Mountain natural block.
- C **Alternative 5a** has a low potential to impact the hydro-biological functions of the riverine system in urban and agricultural areas. This alternative has a medium potential to interrupt the hydro-biological functions of the riverine system within the Warm Springs Creek linkage between the Antelope Hills natural block and the Bachelor Mountain natural block where an existing road is in place.
- C **Alternative 5b** has a low potential to impact the hydro-biological functions of the riverine system in urban and agricultural areas. This alternative has a medium potential to interrupt the hydro-biological functions of the riverine system within the Warm Springs Creek linkage between the Antelope Hills natural block and the Bachelor Mountain natural block. Alternative 5b has a high potential for impacts to Pechanga Creek at two locations (unroaded areas) south of the SR-79 South where this riparian forest riverine system links the Pechanga natural block with natural areas of the adjoining Cleveland National Forest.

The relative levels of impacts to the hydro-biological functions of the WT alternatives are summarized below.

Level of Impact to Hydro-Biological Functions	WT Alternatives						
	1	3	5a	5b	7a	7b	H
Low					X	X	
Moderate	X	X	X				X
High				X			

#### 4.11.2.10 Other Direct Effects

In addition to the direct effect of potential habitat removal within each of the alternatives' right-of-way, the Corridor alternatives will likely have other direct effects on biological resources, including spillover of light and glare from the future transportation corridor facilities, noise, dust and other air quality emissions during construction and during long-term operations, and additional disturbances to wildlife due to increased human presence, thereby decreasing adjacent habitat values. These potential direct effects may occur within and/or adjacent to the right-of-way areas evaluated in this Tier 1 level EIS/EIR. The specific location of the selected corridor alternative to be evaluated as part of the Tier 2 process, and the specific design and placement of that alternative within the reserved right-of-way, will enable a more precise evaluation of where and to what degree these other direct effects may occur. This Tier 1 analysis acknowledges the potential for light and glare, noise, dust and emissions, and human encroachment as direct effects of the proposed corridor.

#### 4.11.2.11 Indirect Effects

The proposed WT Corridor could have indirect effects on biological resources, in addition to the direct, physical effects described above. Indirect effects of the corridor on biological resources could be caused by potential intensification of planned development areas due to the additional roadway capacity provided by the transportation corridor. Section 7.1 of this EIS/EIR addresses the potential growth inducing impacts of the corridor alternatives. The potential for intensification of land uses as a result of developing an improved transportation route in areas where community centers, retail commercial, industrial and residential uses are planned in the Riverside County General Plan (April, 2002) is addressed in Section 7.1. The growth inducing analysis concludes that the CETAP corridor would facilitate access to planned development areas and may incrementally increase the intensity of these areas along the corridor alternatives, but that other development areas planned in the study area not proximate to a particular alternative could be reduced in intensity as currently planned. The analysis concludes that the corridor could be growth accommodating but would not generate substantial unplanned growth.

The following section evaluates, specifically, the potential growth facilitating effects of each of the corridor alternatives on sensitive biological resources in the vicinity of planned community centers, retail commercial uses, and lower density residential uses. The Habitat Maps in Appendix A of the Biological Resources Technical Report for the Winchester to Temecula corridor provided information pertaining to existing habitats in the vicinity of the corridor alternatives.