Section 404(b)(1) On-Site Alternatives Analysis

For

Carpenter Ranch

City of Folsom, California

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FPA Land Development

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ENVIRONMENTAL CONSULTANTS

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INTRODUCTION

The 1,024-acre Carpenter Ranch project is located in the northwestern portion of the Folsom Plan Area Specific Plan. The purpose of the Folsom Plan Area Specific Plan project is: (1) to construct a large-scale, mixed-use master-planned community consisting of mixed-density residential uses, a regional shopping center, and other employment-generating uses; (2) to provide associated supporting infrastructure including on-site backbone infrastructure, schools, parks, an on-site trail system, off-site sewer improvements, off-site roadway improvements, off-site highway interchanges, an off-site water supply pipeline from the Freeport Regional Water Authority diversion facility to the site, and an off-site water treatment plant; and (3) to permanently protect 30 percent of the site as open space for the preservation of oak woodlands and sensitive habitat areas in manner consistent with Measure W.

An application for a Department of the Army permit under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material to a total of 8.817 acres of aquatic features was submitted on 20 November 2009. As a result of land use revisions to further avoid wetlands and waters and updated wetland acreage information, proposed wetland and water impacts total 8.438 acres, including 8.429 acres of waters of the United States (U.S.). Impacts to potentially jurisdictional waters of the U.S. total 8.429 acres, consisting of 0.764 acre of vernal pools, 0.008 acre of depressional seasonal wetlands, 4.340 acres of seasonal wetland swale, 1.235 acres of seep, 0.014 acre of marsh, 1.252 acres of drainage channel, and 0.817 acre of ditch. In addition to the 8.429 acres of impacts associated with the Carpenter Ranch project, impacts associated with the Backbone Infrastructure (4.798 acres) and impacts associated with the Oak Avenue interchange (0.615 acres) would occur on the Carpenter Ranch property. The combined impacts total 13.842 acres. An additional 0.009 acre of impacts to non-jurisdictional features results in a total impact of 13.851 acres. This is the baseline acreage used throughout this document.

PROJECT PROPONENT

Project:

Carpenter Ranch

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PROJECT LOCATION

The project site is located in Sections 9, 16, 17, and 18, Township 9 North, Range 8 East, MDB&M, Sacramento County, California. The parcel can be found at UTM 661,695.75 M E; 4,278,082.56 M N (Zone 10) and is portrayed on the Clarksville and Folsom, California 7. 5 Minute Series Quadrangles. The site is located within the Lower American River Watershed. Please refer to Figure 1 (*Site and Vicinity*).

PROJECT DESCRIPTION

The Carpenter Ranch Project proposes to develop approximately 1,024 acres of land in eastern Sacramento currently located within the proposed Folsom Plan Area Specific Plan. The proposed project will include both single and multi-family residential housing, commercial and office development, parks, open space, and public uses, including a school site. The project site contains approximately 27.666 acres of wetlands and waters, of which approximately 13.815 acres would be avoided and preserved in perpetuity. The plan provides for a mix of land uses and residential densities designed to serve the Highway 50 corridor. The Carpenter Ranch Proposed Project Land Use Plan is shown in Figure 2.

Housing

The project proposes construction of approximately 847 single-family detached units on approximately 202.4 acres, and 978 multi-family units totaling approximately 63.8 acres. In addition, the site contains two areas for Mixed Use development consisting of 39.5 acres which would include 454 additional higher density residential units as well as a mixture of commercial, service, office and civic uses. Multi-family housing would be located in close proximity to commercial centers and key arterials or intersections where public transit services would be available.

Commercial and Office

Commercial and Office development is proposed for several areas within the project area totaling approximately 252.9 acres. A large regional commercial mall is proposed for the southwest corner of the intersection of Highway 50 and Scott Road, which would contain major regional retail tenants and supporting retail uses and restaurants. This mall would draw customers from a regional service area extending beyond the City of Folsom. Adjacent to the west end of the mall site is a Mixed Use area which would contain a mix of uses such as commercial, office, entertainment, restaurants and housing. Four other major commercial centers that include large discount retailers, grocery and drug stores and similar land uses that rely on a broad market area for their economic viability would be located along major roadways. Four other parcels are designated for Industrial/Office Park use. They would contain uses that include business parks, offices and light industrial space.

Town Center

South of the Easton Valley Parkway and the Regional Mall Site, a 14.1-acre area designated Mixed Use is proposed for uses consisting of high density housing, support neighborhood scale commercial uses, civic uses, and a community gathering place.

Open Space

The proposed project would preserve over 348 acres of open space, protecting the most valuable resources within the specific plan. Contained within the open space preserves are large expanses of oak woodland the main branch of Alder Creek and its southern tributary, and other sensitive natural resource features. Passive recreational use is proposed within the open space area including a paved trail system, small picnic areas, and rest areas. Recreational features would be located to avoid impact to sensitive resources. Storm water would be treated with a variety of best management practices prior to discharging to the open space area and existing drainage corridors.

Schools

Approximately 10 acres of the project area would be dedicated for an elementary school site.

Parks

Three parks are proposed on approximately 8.5 acres, and would be sited within the project and the Specific Plan area to satisfy the demand for recreational facilities. Numerous landscape corridors would be constructed along major and collector roadways to provide pedestrian and bicycle connection throughout the plan.

ENVIRONMENTAL SETTING

Current Conditions

The Carpenter Ranch Project is located in the Sacramento Valley, east of the Greater Sacramento Metropolitan Area (see Figure 1). The Project site consists of two discrete sections, which abut the south side of U.S. Highway 50 and are situated in the foothills on rolling to relatively flat terrain at an elevation of approximately 300 to 400 feet. The 1,000-acre west section is separated from the 54-acre east parcel by Placerville Road and a reach of the Southern Pacific Railroad. The site supports no habitable structures except for an abandoned

trailer. Various relic pits, dredger tailing piles, and channels/ditches from historic gold mining operations are scattered throughout the site. A power line right-of-way traverses the property from north to south. The western-most boundary is bracketed by Prairie City Road. Lands to the south and east are sparsely developed rangelands, while properties north of Highway 50 support various commercial and residential developments.

Adjacent Land Uses

Carpenter Ranch and the Specific Plan Area (SPA) are surrounded by agricultural and rural residential land uses to the south. Land west of the project site is owned by the Aerojet-General Corporation and is planned for future residential/commercial development and ongoing Aerojet operations. Land east of the project site lies within El Dorado County and consists of residential housing. Residential and commercial development is located north of the project site, on the opposite side of Highway 50. Regional access to the project site would be provided from Highway 50, which also forms the site's northern boundary. Local access to the project site is provided by Prairie City Road, East Bidwell Street, and White Rock Road. Alder Creek transects the SPA diagonally from the south-central portion to the northwest corner of the plan area.

Vegetative Communities

The majority of the study area supports two general habitat types: disturbed, non-native annual grasslands and oak forest/woodland/savannah. The eastern portion, including the disjointed eastern parcel, in general is flatter and dominated by wild oats (*Avena fatua*), tarweed (*Holocarpha virgata*), and medusa-head (*Taeniatherum caput-medusae*). Common grasses and forbs include perennial rye grass (*Lolium perenne*), little quaking grass (*Briza minor*), soft chess (*Bromus mollis*), and prickly lettuce (*Lactuca serriola*). The western half supports an overstory primarily composed by live oak (*Quercus wislizenii*), valley oak (*Quercus lobata*), and blue oak (*Quercus douglasii*). The understory consists of dogtail (*Cynosurus echinatus*), tarweed, soft chess, hairy hawkbit (*Leontodon leysseri*), and perennial rye grass.

Soils

According to the April 1993, "Soil Survey of Sacramento County, California," nine soil map units occur within the study area [Figure 3. *Carpenter Ranch – Natural Resources Conservation Service (NRCS) Soil Types*]. The first is Argonaut-Auburn complex, 3-8% slopes (107) which is composed of about 45% Argonaut soil and 35% Auburn soil. Both are well drained and derived from weathered metaandesite and metamorphic rocks. The Argonaut component is moderately deep and has an underlying variegated hardpan typically at a depth of 14 inches. Permeability for this component is very slow resulting in pooled water for short periods after heavy winter/spring rains or over irrigation. The Auburn component is shallow or moderately deep and possesses fractured metabasic bedrock at 14 inches. This unit contains inclusions of Creviscreek, Hicksville, and Mokelumne soils, and Xerorthents, and rock outcrop. The second soil unit is Argonaut-Auburn-Rock complex, 8-30% slopes (110). This unit is composed of approximately 40% Auburn soil, 35% Argonaut soil, and 10% Rock outcrop while the remaining 15% contains inclusions of Mokelumne soils, soils with slopes greater than 30%, and soils with bedrock 10 inches below the surface. The Auburn component is shallow or moderately deep and well drained. The Argonaut soil is moderately deep, well drained, and possesses a 15 inch thick claypan approximately 14 inches below the surface. After heavy rains, water may temporarily perch above the claypan. The third map unit is Hadselville-Pentz complex, 2-30% slopes (156). The Hadselville component makes up about 45% of the complex and is very shallow and moderately well drained. The Pentz component, which is shallow and well drained, forms about 45% of the complex. In some areas a thin hardpan is situated over bedrock. Included in the unit are areas of Hicksville, Keyes, Ranchoseco, Pardee, Peters, and Redding soils, and Lithic Xerorthents. The fourth unit is Hicksville sandy clay loam, 0-2% slopes, occasionally flooded (160), which is a moderately deep and moderately well drained soil. This unit includes a perched seasonal water table about 36 to 48 inches below the surface and often is subject to short term flooding after intense rain events. Inclusions within the map unit include Amador, Columbia, Corning, Crevicreek, Pentz, and Redding soils. The fifth soil mapped is Orangevale coarse sandy loam, 2-5% slopes (183). This is a very deep, well drained soil with inclusions of Fiddyment soils, Xerarents, and Urban land. It is associated with high terrace remnants and is derived from granitic rock sources in alluvium. The sixth unit is Red Bluff loam, 2-5% slopes (192), which also includes small areas of Redding soils and Xerorthents. This soil

is very deep, well drained, and associated with high terraces. A hardpan is commonly found at 40 to 60 inches. The seventh unit is Red Bluff-Xerorthents, dredge tailings complex, 2-50% slopes (196). This soil is composed of about 45% Red Bluff soils, 40% Xerorthents, and 15% inclusions of Corning, Hicksville, Redding soils and Slickens, and/or an unnamed soil with a hardpan at 40-60 inches. The Red Bluff soil is well drained, very deep, and derived from mixed rock sources, while the Xerorthents component represents areas of dredge tailing deposits. Vleck gravelly loam, 2-15% slopes (235) represent the eighth map in the study area. This soil is moderately deep, moderately well drained, and formed in alluvium. Typically, a claypan is situated 13 inches below the surface. Inclusions of Amador and Gillender soils and soils underlain by hardpan at 10 to 20 inches compose approximately 15% of the total acreage. The final unit is Whiterock loam, 3-30% slopes (237), which is very shallow to shallow, and somewhat excessively drained. It is associated with fractured, vertically oriented metasedimentary rock and contains inclusions of Argonaut and Auburn soils, and Rock outcrop.

None of the above soil map units are listed in the June 1991, "Hydric Soils of the United States", or the Natural Resources Conservation Service's "Field Office Official List of Hydric Soil Map Units for Sacramento County, California" (county list) dated March 17, 1992. The Columbia inclusions in 160 are listed as hydric on the county list when associated with low flood planes as is an unnamed inclusion in 192 and 196 when found in depressions. Lastly, the Slickens in 196 are considered hydric if associated with depressions.

Hydrology

Carpenter Ranch is located within the Lower American Watershed (#18020111), the Lower Sacramento Watershed (#18020109), the Lower Cosumnes-Lower Mokelumne Watershed (#18040005), and the Upper Cosumnes Watershed (#18040013) (U.S. Department of Interior, Geological Survey [USGS] 1978).

Wetlands/Waters of the U.S.

Jurisdictional Delineation

Table 1 lists jurisdictional waters of the U.S. and non-jurisdictional wetlands found on-site. A total of 27.666 acres of wetlands and waters have been mapped on the site. These include 1.155 acres of vernal pool (inclusive of 0.019 acre of isolated, non-jurisdictional vernal pools), 0.121 acre of seasonal wetland, 8.932 acres of seasonal wetland swale, 0.092 acre of marsh, 1.498 acre of seep, and 14.501 acre of drainage channels (Figure 4. *Wetland Delineation*).

Table 1 – Jurisdictional and Non-Jurisdictional Wetlands and Waters

Type	Acreage
Vernal pool*	1.155
Seasonal wetland	0.121
Seasonal wetland Swale	8.932
Seep	1.498
Marsh	0.092
Creek/Channel	14.501
Ditch	1.367
TOTAL:	**27.666**

*Includes 0.019 acres of isolated/non-jurisdictional vernal pools

Wetlands

Vernal Pools

In general, vernal pools are topographic basins that are underlain with an impermeable or semi-permeable hardpan or duripan layer. Direct rainfall and surface runoff inundate the pools during the wet season. The pools remain inundated and/or the soil maintains saturation through spring and they are dry by late spring through the following wet season. Vernal pools are scattered throughout the site. Dominant plants within the vernal pools included annual hairgrass (*Deschampsia danthenioides*), white-head navarretia (*Navarretia leucocephala*), Vasey's coyote-thistle (*Eryngium vaseyi*), Mediterranean barley, slender popcorn-flower (*Plagiobothrys stipitatus*), and dwarf wooly-heads (*Psilocarphus brevissimus*). Other species found within the vernal pools include downingia (*Downingia* species), dwarf brodiaea (*Brodiaea minor*), Sacramento mesamint (*Pogogyne zizyphoroides*), smooth goldfields (*Lasthenia*

glaberrima), creeping spikerush (*Eleocharis macrostachya*), Fitch's spikeweed (*Hemizonia fitchii*), smooth cat's-ear, hairy hawkbit, sticky tarweed, soft chess, and ryegrass.

Seasonal Wetlands

Seasonal wetlands are ephemerally wet due to accumulation of surface runoff and rainwater within low-lying areas. Inundation periods tend to be relatively short and they are commonly dominated by non-native annual, and sometimes perennial, hydrophytic species. Seasonal wetlands occur scattered throughout the site, often in close association with vernal pools, seasonal wetland swales, and ephemeral drainages. Plant species identified within the seasonal wetlands included ryegrass, Mediterranean barley, Vasey's coyote-thistle, sticky tarweed, smooth cat's-ear, Sacramento mesamint, least spikerush (*Eleocharis acicularis*), blow-wives (*Achyrachaena mollis*), annual hairgrass, marigold navarretia, poverty rush (*Juncus tenuis*), toad rush (*J. bufonius*), hyssop loosestrife (*Lythrum hyssopifolium*), little quaking grass (*Briza minor*), vulpia (*Vulpia bromoides*), nitgrass, Oregon wooly-heads (*Psilocarphus oregonus*), dwarf wooly-heads, annual rabbitsfoot grass (*Polypogon monspeliensis*), bracted popcornflower (*Plagiobothrys bracteatus*), dwarf brodiaea, white-tip clover (*Trifolium varigatum*), small-head clover (*T. microcephalum*), bull clover (*T. fucatum*), barnyard grass (*Echinochloa crus-galli*), swamp grass (*Crypsis schoenoides*), and medusahead grass.

Seasonal Wetland Swales

These are linear wetland features that do not exhibit an ordinary high water mark. Seasonal wetland swales occur throughout the site, often in close association with ephemeral drainages. Plant species identified within the seasonal wetland swales included Vasey's coyote-thistle, sticky tarweed, toad rush, Mediterranean barley, mannagrass (*Glyceria declinata*), little quaking grass, white-tip clover, Sacramento mesamint, dwarf brodiaea, least spikerush, ryegrass, needle-leaf navarretia, vulpia, annual rabbitsfoot grass, annual hairgrass, nitgrass, little quaking grass, hairgrass, annual bluegrass (*Poa annua*), medusahead grass, soft chess, hairy hawkbit, and smooth cat's-ear.

Seep

Seeps are seasonally or perennially wet areas resulting from discharge of groundwater to the surface. A seep occurs in the northeastern portion of the site and is associated with a seasonal wetland. Plant species identified within the seep included barnyard grass, mannagrass, swamp smartweed (*Polygonum hydropiperoides*), water primrose (*Ludwigia peploides*), bull clover, and small-head clover.

Marsh

These marshes occur in areas that are permanently flooded, lack significant water currents, and are dominated by perennial emergent wetland plants that can reach 12 feet in height. Species found in this wetland type include broad-leaved cattail (*Typha latifolia*), as well as several low-growing perennial species. The latter include: rushes (*Juncus effusus, J. patens, and J. balticus*), tall nutsedge (*Cyperus eragrostis*), and spikerush (*Eleocharis montevidensis*). Vegetation in these wetlands can be very dense forming closed canopies that benefits breeding birds and mammals (Holland, 1986).

Creek/Channel

Alder Creek flows east to west through the northern portion of the site. This creek is identified as a blue-line feature on the "Folsom, California" and "Buffalo Creek, California" 7.5-minute quadrangles. The portion of Alder Creek located within the site conveys perennial flows; however, the creek becomes intermittent in areas within the site. The creek exhibits an ordinary high water mark with bed and bank characteristics. Plant species observed within and adjacent to Alder Creek included cattail, willows (*Salix* species), South American vervain, soft rush (*Juncus effusus*), nutsedge, dallies grass, and Himalayan blackberry.

Wetland hydrology indicators observed within Alder Creek included soil inundation and saturation, water marks, drift lines, and scoured bed and bank. A soil pit was not excavated at the data point location due to the depth of the water. The soil matrix color in an adjacent upland area was 10YR4/3 without mottles.

Ditch

Numerous constructed ditches occur within the site that pond water for a sufficient period of time during the growing season to support hydrophytic vegetation. These features were constructed on contour; however, they appear to no longer convey flow. Those constructed ditches that have fallen so far into disrepair that they no longer convey or pond water and are dominated by upland-associated plant species were not included on the wetland delineation map, as these features do not qualify as waters of the U.S. Dominant plant species within the constructed ditches included Vasey's coyote-thistle, Carter's buttercup, creeping spikerush, and annual hairgrass. Other species commonly observed within these features included hyssop loosestrife, smooth cat's-ear (*Hypochaeris glabra*), Mediterranean barley, and sticky tarweed.

REGULATORY BACKGROUND

Clean Water Act, Section 404 Application

The Applicant submitted a permit application to the U.S. Army Corps of Engineers (Corps) to obtain authorization to discharge dredged and/or fill materials into waters of the U.S. under the authority of the Corps pursuant to Section 404 of the Clean Water Act on 20 November 2008. Pursuant to these requirements, the Corps will conduct a two-part analysis: 1) the Corps will determine consistency with Section 404 (b)(1) Guidelines to consider practicable alternatives to the dredge or fill of waters of the U.S.; and 2) the Corps will conduct a public interest review. This document provides the analysis of practicable alternatives.

Purpose of Alternatives Analysis

The purpose of this analysis is to objectively evaluate the practicability of several alternatives to the proposed project and provide the Corps with documentation to be used in evaluating the proposed project permit application for compliance with Section 404(b)(1) (guidelines). The guidelines require that the alternatives analysis be adequate to establish that the project is the least environmentally damaging practicable alternative (LEDPA). This is accomplished by comparing the proposed project with other alternatives in terms of practicability, project

purpose, and overall environmental effects. For this analysis, a reasonable statement of purpose has been developed and the alternatives have been evaluated in light of that purpose.

While it is understood that the information provided in this document must be verified by the Corps, the analysis is consistent with federal regulations and provides a fair and objective evaluation of alternatives.

This section presents an overview of the requirements of the 404(b)(1) guidelines and a discussion of the implementing guidance issued by the Corps. The 404(b)(1) guidelines are the substantive criteria used by the Corps in evaluating discharges of dredged or fill material into waters of the U.S. under Section 404 of the Clean Water Act. The guidelines require that four criteria be satisfied in order for the Corps to make a decision that a proposed discharge is in compliance. These criteria are:

1. *The discharge must be the least environmentally damaging practicable alternative*: This alternatives analysis evaluates a range of alternatives to the proposed project, in terms of environmental effects, practicability and consistency with the overall project purposes.
2. *The discharge must not violate any water quality standard, toxic effluent standard or jeopardize the continued existence of a threatened or endangered species*: Through the environmental review process, mitigation measures will be developed to insure that water quality and toxic effluent standards will not be violated. The U.S. Fish and Wildlife Service will be consulted regarding potential effects to federally listed species.
3. *The discharge must not result in a significant degradation of the waters of the United States*: Water quality impacts and potential impacts will be minimized through implementation of water quality management and erosion control plans as approved by the Regional Water Quality Control Board and the local planning jurisdiction.
4. *Unavoidable impacts to the aquatic ecosystem must be mitigated*: Based on an agreement between the Corps and EPA, efforts must first be directed at avoiding and reducing impacts to waters of the United States prior to the evaluation of potential compensatory mitigation measures. Mitigation may be applied only to unavoidable impacts. In keeping with this guidance, this alternatives analysis does not attempt to substitute mitigation for avoidance wherever the project goals may concurrently be met.

Unavoidable impacts to biological resources associated with waters of the United States will be mitigated by either on-site construction of compensation wetlands, through the purchase of appropriate mitigation credits from agency-approved sources, or by a combination of mitigation measures acceptable to the regulatory agencies.

Before the Corps can issue a permit, they must find that the requirements of the guidelines have been satisfied. The key criteria for most permit applicants, and the focus of this analysis, is the requirement that the discharge be the least environmentally damaging, practicable alternative. The pertinent section of the regulation states:

"Except as provided under Section 404(b)(2), no discharge of dredged of fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have a less adverse impact on the aquatic ecosystem so long as discharge does not have other significant adverse environmental consequences.

a. For the purposes of this requirement, practicable alternatives include, but are not limited to:

    1) On-site activities that do not include a discharge into waters of the United States or ocean waters,
    2) Discharges of dredged or fill material at other locations in waters of the United States or ocean waters,

b. An alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology and logistics in light of overall project purposed. If it is otherwise a practicable alternative, an area not presently owned by the applicant which could reasonably be obtained, utilized, expanded, or managed in order to fulfill the basic purpose of the proposed activity may be considered;

c. Where the activity associated with a discharge which is proposed for a special aquatic site does not require access or proximity to or citing within the special aquatic site in question to fulfill its basic purpose (i.e., is not "water dependent"), practicable

alternatives that do not involve special aquatic sites are presumed to be available unless clearly demonstrated otherwise. In addition, where a discharge is proposed for a special aquatic site, all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact on the aquatic ecosystem, unless clearly demonstrated otherwise."

The key provisions in the language are practicability and overall project purposes. An alternative is practicable if it is available to the applicant and capable of being accomplished by the applicant after consideration of costs, existing technology and logistics, in light of overall purposes. If a practicable alternative would have less impact on the aquatic ecosystem, and does not include other significant adverse impact, then the proposed project is not the least damaging practicable alternative.

ALTERNATIVES

The proposed project (excluding backbone and interchange infrastructure) would directly impact 8.438 acres of wetlands and waters, which are special aquatic sites as described above (Figure 5. *Carpenter Ranch - Proposed Preserve & Impact Plan).* None of the proposed project components are considered to be water dependent. Therefore, according to the guidelines, less damaging alternatives are presumed to be available unless demonstrated otherwise. The following discussion presents the methodology of the analysis, followed by an evaluation of the alternatives for determination of the least damaging practicable alternative as compared to the proposed project. Alternatives have been developed and evaluated with the goals of practicability, consistency with the overall project purposes, and avoiding and minimizing impacts to waters of the U.S..

ALTERNATIVES ANALYSIS

The alternatives analyzed in this document were developed in consultation with the Corps. Overall land use configurations of Carpenter Ranch were evaluated in an analysis of alternatives studied for the entire FSPAP (On-Site Alternatives Information For Folsom Plan Area Specific

Plan Project), which was conducted to support the Environmental Impact Statement/Environmental Impact Report (EIS/EIR) being prepared for the SPA. Following review of that document, the Corps identified specific areas on the Carpenter Ranch property for which it requested a project-specific analysis to determine if additional avoidance was practicable. One alternative analyzed in this document is also included in the 404(b)(1) prepared for the Backbone Infrastructure project that is being processed by the City of Folsom, as the avoidance related primarily to the realignment of Easton Valley Parkway – a significant component of the Backbone Infrastructure permit application that supports the entire Specific plan. As such, the following alternative was analyzed to determine if there were less environmentally damaging alternatives (Figure 6. *Carpenter Ranch Alternatives - Overview*):

- **Alternative A**

  Alternative A evaluates the possibility of avoiding a small channel located within an office park proposed in the northwest corner of Carpenter Ranch. This alternative would avoid 0.037 additional acres of wetlands/waters. Avoiding impacts to the drainage would result in the loss of 3.5 acres of planned development. There would be approximately $2,697,000 in additional construction costs, $1,033,000 in additional development cost, and $3,730,000 in total costs to avoid impacting the wetland/waters.

- **Alternative A with 25' Buffers and Culverts**

  At the request of the Corps of Engineers, Alternative A was also analyzed to determine if avoidance of the feature(s) was practicable using 25' wetland buffers (in lieu of the 75' buffers that have been proposed throughout the Folsom Specific Plan Area) and using culverts at required crossings as opposed to using bridges and/or clear-spans. This alternative was developed because initial review showed that the significant amount of developable land that was lost using the 75' buffers and the increased costs associated clear-spans may preclude Alternative A from being considered a practicable alternative.

- **Alternative B (Includes B1, B2, and B 3)**

  Alternative B evaluates the possibility of avoiding three separate drainages in the central `portion of the project, which includes the Entertainment District and Residential uses. This alternative would avoid 1.010 additional acres of wetlands including vernal pools,

seasonal wetland swales, creek/channel, and a ditch. This alternative results in the loss of 23.70 acres of planned development. There would be approximately $9,045,000 in additional construction costs, $7,487,000 in additional development cost, and $16,532,00 in total cost to avoid impacting the wetlands/waters.

- **Alternative B with 25' Buffers and Culverts**

  At the request of the Corps of Engineers, Alternatives B1, B2, and B3 were also analyzed to determine if avoidance of the feature(s) was practicable using 25' wetland buffers (in lieu of the 75' buffers that have been proposed throughout the Folsom Specific Plan Area) and using culverts at required crossings as opposed to using bridges and/or clear-spans. This alternative was developed because initial review showed that the significant amount of developable land that was lost using the 75' buffers and the increased costs associated clear-spans may preclude Alternative B from being considered a practicable alternative.

- **Alternative C**

  Alternative C evaluates the possibility of avoiding a seasonal swale feature and associated habitat in the northwestern portion of the property by relocating the alignment of the proposed Easton Valley Parkway. This alternative avoids 1.008 additional acres of wetlands including seasonal wetland, seasonal wetland swales, and creek/channel. This alternative results in the loss of 2.2 acres of planned development. There would be approximately $835,000 ($329,000 for project and $506,000 for backbone) in additional construction costs, $225,000 in additional development costs, and $1,060,000 ($554,000 for project and $506,000 for backbone) in total costs to avoid impacting the wetlands/waters.

Proposed Project

The Proposed Project avoids 13.815 acres of wetlands including vernal pools, seasonal wetland, seasonal wetland swales, seep, marsh, creek/channel, and ditch. Unavoidable impacts to wetlands and waters of the U.S. total 8.438 acres for the Carpenter Ranch project and 5.413 acres for the Backbone Infrastructure and Interchange projects within Carpenter Ranch.

A summary of land use and wetland impact acreages for the proposed project and each alternatives evaluated is presented below in Table 2.

Table 2 – Alternatives Land Use and Wetland Summary

	Open Space acreage (acre±)	Developable Net acreage (acre±)	Preserved Waters of U.S.*	Impacts to Waters of the U.S.			Additional Avoidance of Waters of the U.S.
				CR	BB	INT.	
Alternative A	360.7	680.4	13.825	8.401	4.798	0.615	0.037
Alternative B	374.2	666.9	14.825	7.428	4.798	0.615	1.010
Alternative B1	360.2	680.9	13.858	8.395	4.798	0.615	0.043
Alternative B2	369.0	672.1	14.647	7.606	4.798	0.615	0.832
Alternative B3	361.3	679.8	13.950	8.303	4.798	0.615	0.135
Alternative C	360.4	680.6	14.823	8.438	3.790	0.615	1.008
Proposed Project	358.1	682.9	13.815	8.434	4.798	0.615	N/A

* Includes 0.01 acre of the non-jurisdictional vernal pools
** Includes 0.009 acre of the non-jurisdictional vernal pools
CR: Carpenter Ranch project; BB: Backbone Infrastructure; INT: Highway 50 Interchange

Analysis of Alternatives

The practicability of on-site alternatives is analyzed using three basic criteria. First, the analysis considers whether the alternative would meet the Project Purpose; secondly, if any logistical issues would render the alternative impracticable. This analysis primarily considers whether the infrastructure necessary to support the alternative could be feasibly installed. Next, the analysis considers basic cost factors, including an estimation of the cost of infrastructure and other development costs per developable acre for the Proposed Project and the other project alternatives. The analysis addresses project level costs that would make an alternative impracticable or otherwise incapable of being done. Each alternative is also analyzed in regards to environmental factors (impacts to wetlands/waters and federally listed species); and finally other factors that should be considered in regards to regional needs. To summarize, in an effort to determine the least environmentally damaging practicable alternative for the project, the applicant analyzed the alternatives based on the following criteria:

Factors Affecting Practicability

1. **Project Purpose** – does the alternative contain sufficient acres of developable area in an appropriate configuration to support a large-scale master planned multi-use, density diverse community with a regional mall and other regional commercial uses in a transit and pedestrian friendly environment in the Folsom Plan Are Specific Plan.

   The Carpenter Ranch project is a portion of the Folsom Plan Area Specific Plan. The purpose of the Folsom Plan Area Specific Plan project is: (1) to construct a large-scale, mixed-use master-planned community consisting of mixed-density residential uses, a regional shopping center, and other employment-generating uses; (2) to provide associated supporting infrastructure including on-site backbone infrastructure, schools, parks, an on-site trail system, off-site sewer improvements, off-site roadway improvements, off-site highway interchanges, an off-site water supply pipeline from the Freeport Regional Water Authority diversion facility to the site, and an off-site water treatment plant; and (3) to permanently protect 30 percent of the site as open space for the preservation of oak woodlands and sensitive habitat areas in manner consistent with Measure W.

2. **Logistics** – does the alternative conform to the land use plan circulation design and school and park, water treatment, flood control standards, and Measure W requirements?

   The proposed project complies with Measure W by providing 30% open space, protection of the majority of the oak trees on-site, provides flood protection, water quality treatment, preserves existing cultural resources while providing an appropriate balance of housing, educational, commercial and retail development to ensure a successful and viable development.

3. **Costs Impact Analysis** – does the alternative result in additional costs? Are the additional costs reasonable in relation to the amount of additional wetland avoidance that could be achieved. Does the alternative have a development cost per net

developable acre that is not substantially more than that of the proposed project alternative?

The proposed project cost for the alternative study areas total $114,690,230, which equates to $563,865 per developable acre. The proposed project cost for alternative study area "A" is $11,087,140, which equates to $667,900 per developable acre; the proposed project cost for alternative study area "B" is $52,012,890, which equates to $672,001 per developable acre; and the proposed project cost for alternative study area "C" is $51,590,200, which equates to $471,574 per developable acre.

4. **Environmental Impacts** – does the alternative have significantly less impacts on waters of the U.S. than the proposed project alternative? Does the alternative have significantly less impacts on federally listed species than the proposed project alternative?

A wetland delineation has been conducted and submitted for the property. Based upon the best available information, approximately 27.666 acres of wetlands and waters of the U.S. have been delineated within the site. Of the 27.666 acres mapped on-site, the proposed project would result in direct impacts to approximately 8.438 acres of wetlands and waters of the U.S. and avoidance/preservation of approximately 13.815 acres of waters of the U.S.

Federally listed species that could potentially be affected within the Carpenter Ranch project include the threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)(VELB), and species associated with vernal pools including the threatened vernal pool fairy shrimp (*Branchinecta lynchi*), the endangered vernal pool tadpole shrimp (*Lepidurus packardi*), the threatened slender orcutt grass (*Orcuttia tenuis*), and the threatened Sacramento orcutt grass (*Orcttia viscida*). Note: determinate-level surveys for vernal pool fairy shrimp, vernal pool tadpole shrimp, and rare plant surveys for slender and Sacramento orcutt grasses have been conducted for the entire Carpenter Ranch project. No listed species have been found to occur.

5. **Overall** – an alternative is considered not practicable if does not meet all of the above criteria.

Alternative A

Overview

Alternative A evaluated the possibility of avoiding a small channel located within an office park proposed in the northwest corner of Carpenter Ranch (Figure 7. *Carpenter Ranch Alternative A*). This alternative would avoid 0.037 addition acres of wetlands/waters. Avoiding impacts to the drainage would result in the loss of 3.5 acres of planned development. As a result of this alternative there would be significant increase in cost and insignificant change in wetland impacts.

Project Purpose

Although the overall project purpose could still be met by avoiding this feature, it would effectively eliminate approximately half of the proposed business park acreage in the alternative area. Avoiding the drainage through the middle of the parcel would essentially preclude development of the parcel as the fragmented remnant parcels would not be of sufficient size to support the required infrastructure (Figure 8. *Carpenter Ranch Alternative A - Conceptual Land Use Plan*).

Logistics

In order to preserve this wetland feature and provide a minimum buffer distance of 75-feet from the feature, a 150-foot minimum width open space corridor would need to be incorporated into the business park land use plan and would require additional infrastructure to serve the development.

Avoidance of the drainage would preclude the construction of a main entrance/exit road to the business park, creating potential traffic circulation problems. In addition, to maintain site

ingress and egress, two bridges would be required to span a portion of the 150-foot wide wetland buffer corridor. One bridge would be located on the collector roadway that connects the Site to adjacent development and is its primary access. A second on-site bridge would be necessary to maintain secondary access for emergency ingress and egress and Site circulation.

Since the Site is isolated from the Folsom Plan Area Specific Plan backbone storm drainage infrastructure, the Site requires its own storm water quality/detention basin. Storm water quality/detention basins prevent untreated and uncontrolled storm runoff releases from entering the wetland preserve corridor and damaging the feature being preserved. Since wetland preserve corridors are located in the lower areas of a site where the water quality/detention basins are located, dividing the site with a wetland preserve corridor would typically require an additional water quality/detention basin.

Splitting the Lot 37 development into two segments also requires additional sanitary sewer infrastructure. The western portion of the Site would require a small sanitary sewer pump station and a short force main in order to connect it to the Plan Area's Backbone Sanitary Sewer Infrastructure.

Costs Impacts Analysis

In order to quantify the cost impacts of implementing this alternative, an estimate was prepared that compares the Site development cost of the Proposed Project and Alternative A. The unit prices from the Preliminary Cost Estimate, Folsom Plan Area, Proposed Project Estimate dated January 30, 2009 were utilized for this cost impacts analysis.

The cost impacts analysis is divided into three sections. One section identifies the development cost impacts due to the loss of use of the Site. Incorporating a wetland buffer corridor through an Industrial/Office Park site reduces the building square footages that can be yielded per site. Since the Site development area has been reduced, the cost to develop the site has also been reduced. This cost impact analysis incorporates these cost reductions.

Another section of the cost impacts analysis quantifies the Project Specific One-Time Cost Burdens. The size and cost of the backbone infrastructure improvements such as water treatment plants, regional sanitary sewer pump stations, drainage detention basins, freeway interchanges, arterial and collector roadways would not change due to the loss of Industrial/Office Park building square footage. Therefore, these costs were spread over less building square footage area increasing there portion of the backbone infrastructure burden. However, the cost for providing the required public facilities and services would change due to the loss of Industrial/Office Park building square footage since the potential for use of these facilities would be reduced. The cost of public facilities and services such as fire and police personnel, stations and equipment, libraries, community centers and similar public amenities would be reduced due to the smaller population within the Plan Area. As such, both of these revised one-time cost burdens have also been included in the cost impacts analysis.

The third section of the cost impacts analysis identifies the additional cost of on-site and off-site infrastructure improvements that would be required under this Alternative to serve the Site. Additional sewer, water, drainage, and roadway infrastructure improvements such as bridges, boring and jacking of utilities under the wetland buffer corridor and additional storm drainage water quality/detention basins have been quantified. Therefore, the cost of the additional infrastructure to implement Alternative A into the Site has been included in the cost impacts analysis.

As a result of having less development land to spread the Backbone Infrastructure Cost burden over together with the cost of additional infrastructure required to incorporate the Wetland Buffer Corridor, the cost to develop the Site has increased by $3,730,000. This additional cost would increase the cost per developable by $78,884, which would preclude the Site from providing a development with competitive prices. Attachment A provides land use and cost impacts associated with implementing this alternative. Figure 8 presents a conceptual lotting plan and additional open space areas that would be necessary to accommodate the additional avoided wetlands and preserve areas.

Environmental Impacts

Carpenter Ranch Alternative A would result in an insignificant reduction of impacts to a small channel feature. The channel feature conveys flows that enter via a 24-inch culvert that carries runoff from the north side of Highway 50 to the south.

This alternative would result in avoiding direct impacts to 0.037-acre of creek/channel and establishes an additional 3.5 acre of wetland preserve and open space. However, the small culvert located at the drainages confluence with Highway 50 effectively eliminates upstream connectivity, precluding upstream portions of the drainage as a viable wildlife corridor to the site.

The overall affect of this alternative would be the additional avoidance of only 0.037-acre of impact to jurisdictional Waters of the U.S. (at a cost of $3.7 million) and an increase of designated wetland preserve and open space by an additional 3.5 acres (Table 3).

Table 3 – Proposed Impact Acreages and Alternative A

	Proposed Project			Infrastructure Impacts**		Alternative	
Type	Existing*	Avoidance	Project Impacts	Backbone Infrastructure	Interchange Impacts	Alternative Avoidance	Impacts
Vernal Pool	1.155	0.079	0.773	0.289	0.014	0.000	0.773
Seasonal Wetland	0.121	0.112	0.008	0.001	0.000	0.000	0.008
Seasonal Wetland Swale	8.932	1.417	4.340	3.175	0.001	0.000	4.340
Seep	1.498	0.263	1.235	0.000	0.000	0.000	1.235
Marsh	0.092	0.078	0.014	0.000	0.000	0.000	0.014
Creek/Channel	14.501	11.550	1.252	1.101	0.598	0.037	1.215
Intermittent Drainage	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ditch	1.367	0.317	0.817	0.232	0.002	0.000	0.817
Pond	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Willow Scrub	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total:	**27.666**	**13.815**	**8.438**	**4.798**	**0.615**	**0.037**	**8.401**

*Acreages include 0.019 acre of non-jurisdictional vernal pool

**The Backbone Infrastructure and Interchange Impacts are included as the delineation for this project included these areas.

Summary

Adding an open space corridor to protect the wetland feature would preclude a successful, competitively-priced business park from being implemented as infrastructure cost would increase significantly to the point where they could not be economically supported by the

remaining business park facilities. Relocating the business park is also infeasible. The Carpenter Ranch site contains some significant physical constraints that preclude the business park component of the project from being readily relocated. As shown on Figures 9 through 11, Alder Creek and associated wetlands, steep slopes and oak trees occur throughout the Carpenter Ranch property. The business park site cannot be shifted east or west to avoid the wetland feature as the business park currently abuts the property boundary on the west and a proposed open space corridor (protecting a significant tributary to Alder Creek) to the east.

Other constraints (as shown in Figure 12) include aspects of project design that relate to existing infrastructure and key components of the proposed project. One constraint that dictates the type of land use designations is Highway 50. Appropriate uses adjacent to or within 500 feet of an Interstate freeway include business parks and other commercial/retail uses. Residential uses cannot be located within this area, so utilizing the area for residential uses and relocating the business park into areas currently planned for residential is not practicable. The only other area that could support the business park component on the project is the area that is currently proposed for the Regional Mall and Entertainment District, which are essential to the project purpose and cannot be relocated or separated. Another constraints that further hamper efforts to relocate the business park is the 69kv power line easement that bisects Carpenter Ranch.

This alternative is not considered a practicable alternative as it would essentially eliminate half of the proposed business park acreage proposed in the alternative area and cost an additional $3.7 million - while avoiding only 0.037 acre of additional creek/channel habitat.

Evaluation of Alternative A with 25-foot Buffers and Culverts

At the request of the Corps of Engineers, the applicant also evaluated the possibility of avoiding this drainage feature using only 25-foot buffers (as opposed to the standard 25 plus 50 feet that is proposed throughout the FSPA) and culverts (in lieu of clear spans) to reduce additional costs and minimize the amount of development lost to open space.

Project Purpose

The land use plan revisions that would be necessary to preserve the drainage using culverts and providing minimum 25' buffers would eliminate 3.00 acres (18%) of the proposed Office Park (Figure 13. *Carpenter Ranch Alternative A Lotting with 25-foot Buffers and Culverts).* Approximately half of the additional acreage would be lost to preserving the drainage and providing an open space corridor through the center of the office park and light industrial parcel. The other half of lost development land would be a result of having to move the access road on the southern boundary of the office park to the north approximately 100 feet in order to accommodate two water quality basins that would be necessary to treat water before being released into the tributary to Alder Creek. These changes would have a negative affect on the layout and efficiency of proposed office park.

Logistics

The additional grading and retaining walls that would be necessary to allow partial development in this area present logistical challenges that would be costly to overcome. Steep slopes adjacent to the drainage and on the southern boundary of the office park would result in significant grading efforts in order to install culverts, create water quality basins and provide catch-slopes to the existing grade of the open space areas or to the proposed elevations of the office park. (Figure 14. *Carpenter Ranch Alternative A with 25-foot Buffers and Culverts – Slope Analysis*). A significant amount of land (an additional 2.5 acres) would be lost to development (i.e. unavailable for buildings or parking facilities due to the slopes that would be necessary between the preserved wetland feature and final grade(s) of the office park. In addition, costly retaining walls and raised foundations would be required on several roads and buildings in order to implement the revised office park design as shown in Figure 13.

Costs

The alternative would result in additional costs. These costs are associated with the installation of culverts at two drainage crossings, retaining walls adjacent to the feature and the construction of two water quality basins at the southern boundary of the Office Park. As a

result of having less development land to spread the Backbone Infrastructure Cost burden, together with the cost of additional infrastructure required to incorporate this alternative, the cost to develop the Site has increased by $1,893,000. This additional cost would increase the cost per developable acre by $65,129, which would preclude the Site from providing an office park with competitive prices. Attachment B provides land use and cost impacts associated with implementing this alternative. Figure 13 presents a conceptual lotting plan and additional open space areas that would be necessary to accommodate the additional avoided wetlands and preserve areas.

Environmental Impacts

This alternative would result in only 0.028 acres of intermittent drainage being avoided (Figure 15. *Carpenter Ranch Alternative A with 25-foot Buffers and Culverts*). The drainage is not part of a significant drainage system or corridor. The drainage begins at a water quality basin located approximately 100 feet north of Highway 50 and is piped to the southern boundary of Highway 50 via a 24 inch culvert. A storm drain inlet located at the northern edge of Highway 50 allows drainage from a small portion of the freeway right of way to enter the pipe, untreated. The culvert outfall located on the southern side of Highway 50 is not situated at the flow line of the drainage which results in water dropping or pouring about a foot before continuing on down the subject drainage. Figure 16 presents an aerial of the subject drainage and Figure 17 presents photos of the inlet and outlet on Highway 50 as well as a ground-level view of the drainage from the freeway looking north toward the water quality basin located at an office complex just north of the freeway.

Using culverts to cross the drainage reduces cost compared to bridges or clear-spans but also results in additional impacts and causes significant fragmentation of the drainage feature. Given the topography of the site, the culverts would be approximately 150-190 feet long. Fill on top of these culverts would be required to bring the crossing elevations up to the office park level. The result would be a very fragmented drainage that is surrounded by office park and light industrial land uses. Small sections of the drainage would not be filled, but would essentially be situated at the bottom of linear pits, providing little functional wetland and wildlife value.

The drainage would also lose much of its watershed to the proposed business park. As drainage from the park must first be treated before entering the tributary, the majority of the water that falls on the office park would be released back into the tributary downstream of the proposed water quality basins.

Summary

Avoiding the drainage in the center of the parcel would result in significant adverse affects on the project design, cost and marketability of the proposed office park. The additional avoided drainage would total only 0.028 acres of a fragmented intermittent drainage that does not continue upstream in an unaltered state. At a cost of $1,839,000, this equates to $67,607,143 per acre of additional wetland avoidance. Direct impacts from required road crossings and indirect impacts from the minimal buffers, adjacent land uses, and a compromised watershed more than counter any environmental benefit that may be realized from implementing this alternative.

Alternative B

Overview

Alternative B evaluates the possibility of avoiding three separate drainages in the central portion of the project which includes the Entertainment District and Residential uses (Figure 18. *Carpenter Ranch Alternative B*). Cumulatively this alternative avoids 1.010 additional acres of wetlands including vernal pools, seasonal wetland swales, creek/channel, and a ditch. This alternative results in the direct loss of 23.7 acres of planned development and disrupts the planned land-use of a significant component of the Carpenter Ranch project. As a result of this alternative there would be significant increase in cost while preserving only 1.010 additional acres of wetlands. The three potential avoidance areas (B1, B2, B3) were also evaluated independently to determine if one or more could be practicably implemented.

Project Purpose

Avoiding the drainage features in this area of the project would significantly impact the major components of the project purpose. It is estimated that approximately 15 planned single-family units, 44 single-family high density units, and 42 multi-family high density units would be lost as a result of this alternative. These residential units could not be relocated to other locations within the project area, as they would either conflict with adjacent land uses, or potential areas of consideration would not be suitable due to building constraints (e.g., topography). In addition, approximately 102 mixed use units would be lost within the entertainment district, which is an integral component of the proposed project. These mixed use units would contain commercial, office, entertainment, restaurants and housing and are key in meeting the City's design principles regarding walkability, accessibility, and connectivity of the project's land uses . The open space corridor required to preserve the seasonal swale that bisects the proposed entertainment district, together with the open space corridor that is currently included in the proposed project, would result in fragmented parcels that are insufficient in size to support the specific uses planned for this area. These uses cannot be shifted further east, as that would impact the regional mall (Figure 19. *Carpenter Ranch Alternative B - Conceptual Land Use Plan*).

Logistics

In order to preserve the three drainage features and provide a minimum distance of 75-feet of buffer from the features, a 150-foot minimum width open space corridor would need to be incorporated into the land use plan for this portion of the Carpenter Ranch project. The additional avoidance would impact Lots 41, 44, 45, 48, 50 and 51.

As depicted in Alternative B1, one of the drainages (0.043 acre) extends through the northwest quadrant of Lot 50, a single family development (Figure 20. *Carpenter Ranch Alternative B1*). The wetland buffer corridor would bisect Lot 50 from the southeast to the northwest ending in the middle of the Lot 50 access road (Figure 21. *Carpenter Ranch Alternative B1 - Conceptual Land Use Plan Detail*). The proposed Lot 50 Site access is the southern leg of a four-way signalized intersection with Easton Valley Parkway, a 4-lane major arterial roadway. The

northern leg of the intersection is the terminus of Rowberry Road which connects the Plan Area by way of a grade separated overcrossing of Highway 50 to the Broadstone development north of the Highway. The Rowberry Road - Easton Valley Parkway intersection location is fixed and cannot be adjusted due to intersection spacing requirements for major arterials and the Rowberry Road – Highway 50 overcrossing location. Therefore, the only way to maintain access to Lot 50 and preserve the entire length of this feature would be to construct a bridge at this location into the seven acre parcel that would remain south of the newly established corridor. The small portion of Lot 50 that would remain north of the newly established corridor would not yield enough residential units to make it cost effective to connect the two sections with a bridge. Even with the addition of a bridge at this location, the circulation within the two subdivision parcels would be severely limited. In addition, due to intersection spacing requirements for major arterials, an additional access road could not be built to allow access to this section of Lot 50 from Easton Valley Parkway. Therefore, the smaller of the two sections of Lot 50 could not be developed and would be designated as open space.

As this custom home community is an important component of the Carpenter Ranch project's overall design and phasing, attempts were made to identify alternative locations where the subdivision could be relocated, or expanded into, to maintain an adequate amount of developable acreage. As shown on Figure 9 through 11, the open space areas to the west and south of the existing subdivision are very steep oak woodlands that are adjacent to Alder Creek and a tributary. Offsetting the area lost to avoid the drainage is not feasible in these areas.

The area located north of Easton Valley Parkway and west of Rowberry Road was also evaluated as a potential relocation site. This site contains three small vernal pools and a significant number of large oaks as well as being a bit steep topographically to accommodate a 10 acre subdivision. Because of the proximity of Highway 50, any residential development of this area would have to occur at the southern edge of the open space area, adjacent to Easton Valley Parkway. Since the Parkway slopes down toward Alder Creek in this area, access roads to the subdivision (which must be located a sufficient distance from the Rowberry Road intersection) to or from Easton Valley Parkway would be difficult design and costly to install.

In Alternative B2, the possibility of avoiding a swale and vernal pool system totaling 0.832 acres is evaluated. Consistent with the entire plan area, the avoided drainage would be buffered by a 150 foot wide wetland buffer corridor. This corridor would extend through the heart of the Plan Area's Entertainment District (Figure 22. *Carpenter Ranch Alternative B2*). The Plan Area is proposing to develop an Entertainment District located adjacent to the planned Regional Mall (Figure 23. *Carpenter Ranch Alternative B2 - Conceptual Land Use Plan Detail*). As, the Regional Mall and Entertainment District are the key components of the Plan Area's economic engine that would help support the development of the entire Plan Area, architects and commercial land brokers were contacted to assist the applicant in determining if their were any practicable alternatives to the proposed land use plan in the Entertainment District that would allow for avoidance and preservation of the seasonal wetland swale. As stated by one architect, the Entertainment District is envisioned to be a walkable, connected district with a vibrant main street ambiance and a strong pedestrian connection to the adjacent Regional Mall. Additionally, the Entertainment District is planned to provide a vibrant synergy of a variety of large and small uses, such as residential, retail, restaurants, and a theater, to provide an exciting 24/7 destination. The considered linear open space segregates the mixed-use district into several separate parcels, eliminating the cohesive district concept and rendering some of the parcels infeasible for most users, and therefore unusable. Additional critical challenges are created, such as access and adequate parking, potentially crippling the entire concept and rendering this essential District infeasible. In addition to the concerns of practicality and sustainability of the Entertainment District, planners also expressed concern that incorporating the open space corridors would have a domino affect on grading and parking structure costs (in addition to the cost of installing bridges or clear spans between the remnant parcels) and could render the project economically infeasible. (Attachment C – *Letters from Architects, Commercial Real Estate Brokers, and Developers*).

The wetland buffer corridor that would be necessary under this Alternative would reduce the Entertainment District build out by 30%, severely impacting the Plan Area's ability to succeed economically. Furthermore, the loss of businesses within the project area equates to a loss of jobs available to residents within the project area that could be accessed by pedestrian or bikeways consistent with the Folsom General Plan Policy 17.10. The incorporation of this wetland buffer corridor would also require additional infrastructure. The Entertainment District

would require two bridges to span the wetland buffer corridor, and Lot 41 would require a bridge to maintain site connectivity.

Alternative B3 evaluates the possibility of avoiding a seasonal wetland swale and associated habitat totaling 0.135 acres. To accomplish this, a 150 foot wide wetland buffer corridor would be established that would bisect Lot 51 into two separate sections and eliminate 44 residential units (Figure 24. *Carpenter Ranch Alternative B3*). Lot 51 is also located adjacent to Easton Valley Parkway, a 4-lane major arterial road (Figure 25. *Carpenter Ranch Alternative B3 - Conceptual Land Use Plan Detail*). The wetland buffer corridor isolates a portion of Lot 51 from having access to Easton Valley Parkway. Due to intersection spacing requirements for major arterials, an additional access point could not be constructed east of the corridor; therefore, the smaller developable section of Lot 51 would be isolated. It would not be cost effective to connect the two sections by a bridge. Therefore, the smaller of the two sections of Lot 51 could not be developed and would become open space.

In addition, the wetland buffer corridor would isolate the developable section of Lot 51 from the Backbone water quality/detention facility. Therefore, an additional water quality/detention basin would be required.

This residential subdivision is an important component of the Carpenter Ranch project's overall design and phasing. This subdivision will be one of the first phases of the Carpenter Ranch project due to its proximity to Scott Road. Access and infrastructure can be brought to this area at reasonable costs. The sale of these units in first phase(s) will enable the overall project to finance the backbone infrastructure for the Carpenter Ranch project as a whole. Attempts were made to identify alternative locations where the subdivision could be relocated, or expanded into, to offset the loss of developable acreage. As shown on Figure 18, offsetting the area lost to avoid the swale by expanding the subdivision in other areas is not feasible as other avoided wetlands occur in those areas which are already planned for preservation. As discussed in Alternative B1, there are not practicable alternative locations within Carpenter Ranch to which the loss developable land could be relocated.

Costs

In order to quantify the cost impacts of implementing this Alternative, an estimate was prepared that compares the development cost of the Proposed Project and Alternative B. The unit prices from the Preliminary Cost Estimate, Folsom Plan Area, Proposed Project Estimate dated January 30, 2009 were utilized for the cost impacts analysis.

The cost impacts analysis is divided into three sections. One section identifies the development cost impacts due to the loss of available land to develop. Incorporating a wetland buffer corridor through single family and multi-family sites, mixed use commercial and general commercial sites reduces the number of residential and commercial building areas and the improvements required to serve these sites. Since the number of residential units and commercial space has been reduced, the cost to develop these Sites has also been reduced. This cost impact analysis incorporates these development cost reductions.

Another section of the cost impacts analysis quantifies the Project Specific One-Time Cost Burdens. The size and cost of the backbone infrastructure improvements such as water treatment plants, regional sanitary sewer pump stations, drainage detention basins, freeway interchanges, arterial and collector roadways is not reduced due to the loss of the single family and multi-family units, mixed use, and general commercial sites associated with this Alternative. Therefore, these costs are spread over fewer residential units and commercial building areas increasing their portion of the backbone infrastructure burden. The cost for providing the required public facilities and services is minimally reduced due to the loss of residential units and commercial building areas since the population is reduced that require these types of facilities. The cost of public facilities and services such as fire and police personnel, stations and equipment, libraries, community centers and similar public amenities are reduced due to the smaller population within the Plan Area. As such, both of these cost one-time cost burdens have also been included in the cost impacts analysis.

The third section of the cost impacts analysis identifies the additional cost of on-site and off-site infrastructure improvements that would be required under this Alternative to serve the Sites. Additional sewer, water, drainage and roadway infrastructure improvements such as bridges,

boring and jacking of utilities under the wetland buffer corridor and additional storm drainage water quality/detention basins have been quantified. Therefore the cost of the additional infrastructure to implement this Alternative into the Plan Area has been included in the cost impacts analysis.

As a result of having less development land to spread the Backbone Infrastructure Cost burden over together with the cost of additional infrastructure required to incorporate a wetland buffer corridor, the cost to develop this Alternative has increased by $16,532,000. This additional cost would increase the cost per developable acre by $143,153. That equates to approximately $16.5 million per additional acre of avoidance for the cumulative affects of Alternative B. This increased development cost coupled with the large reduction in the Entertainment District would adversely affect the Sites and could render the entire project infeasible.

The additional project cost for Alternative B1 is $2.8 million, results in an increase in cost of $94,850 per developable acre, and costs $65 million per acre of additional wetland avoidance.

The additional project cost for Alternative B2 is $11.7 million, results in an increase in cost of $169,858 per developable acre, and costs $14 million per acre of additional wetland avoidance.

The additional project cost for Alternative B3 is $2 million, results in an increase in cost of $118,506 per developable acre, and costs $14.8 million per acre of additional wetland avoidance.

Attachment D provides land use and cost impacts associated with implementing this alternative(s). Figure 19 presents a conceptual Land Use Plan and additional open space areas that would be necessary to accommodate the additional avoided wetlands and preserve areas.

Environmental Impacts

Carpenter Ranch Alternative B would result in a reduction of 1.010 acres of impacts to wetlands by avoiding direct impacts to vernal pools, a seasonal wetland swale, a creek/channel feature, and ditch features that drain to a tributary of Alder Creek.

This alternative would result in avoiding direct impacts to 0.101-acre of vernal pool, 0.868 acres of seasonal wetland swale, and 0.041-acre of creek/channel, and would result in an additional 23.70 acres of open space (Table 4).

Table 4 – Proposed Impact Acreages and Alternative B

		Proposed Project		Infrastructure Impacts**		Alternative	
Type	Existing*	Avoidance	Project Impacts	Backbone Infrastructure	Interchange Impacts	Alternative Avoidance	Impacts
Vernal Pool	1.155	0.079	0.773	0.289	0.014	0.101	0.672
Seasonal Wetland	0.121	0.112	0.008	0.001	0.000	0.000	0.008
Seasonal Wetland Swale	8.932	1.417	4.340	3.175	0.001	0.868	3.472
Seep	1.498	0.263	1.235	0.000	0.000	0.000	1.235
Marsh	0.092	0.078	0.014	0.000	0.000	0.000	0.014
Creek/Channel	14.501	11.550	1.252	1.101	0.598	0.041	1.211
Intermittent Drainage	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ditch	1.367	0.317	0.817	0.232	0.002	0.000	0.774
Pond	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Willow Scrub	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total:	**27.666**	**13.815**	**8.438**	**4.798**	**0.615**	**1.010**	**7.428**

*Acreages include 0.019 acre of non-jurisdictional vernal pool

**The Backbone Infrastructure and Interchange Impacts are included as the delineation for this project included these areas.

Alternative B1 would result in the additional avoidance of approximately 400 feet of seasonal wetland swale totaling 0.043 acre.

Alternative B2 would result in the additional avoidance of approximately 2,000 feet of seasonal wetland swale totaling 0.832 acre.

Alternative B3 would result in the additional avoidance of approximately 600 feet of seasonal wetland swale totaling 0.135 acre.

Summary

This alternative is not considered a practicable alternative as it would significantly impact the entertainment district and residential areas planned for this area of the Carpenter Ranch project. The infrastructure associated with avoiding the three drainage features would cost an additional $16.5 million - while avoiding only 1.010 acres of additional channel habitat. All three of the additional avoidance areas would involve the extension of drainage corridors for short distances up to where they would terminate at major roadways (Highway 50 and Easton Valley Parkway).

Alternative B1 is not practicable in that it precludes successful implementation of the custom home subdivision. The additional cost of $2.8 million to avoid impacting only 0.043 acre of seasonal wetland is unreasonable. The additional project costs and the loss of developable land would render this component of the project infeasible in that it could not be competitive with other residential subdivisions, thereby affecting the project purpose.

Alternative B2 would avoid an additional 0.832 acres of seasonal wetland habitat. Although the fragmented nature of the developable area under this alternative would essentially preclude successful development of the Entertainment District, the cost analysis conducted to estimate the economic affects of avoiding this wetland feature showed that the project cost would increase by $11.7 million (or $14 million per acre of additional wetland avoidance). Alternative B2 would preclude the overall project purpose from being achieved.

Alternative B3 would avoid an additional 0.135 acre of seasonal wetland habitat. Only about 600 feet of swale would be avoided (terminating at Easton Valley Parkway) at a cost of approximately $2 million. It is essential for this component of the Carpenter Ranch project to be competitively priced, as it is planned to be the catalyst and funding source for the overall Carpenter Ranch project and necessary backbone infrastructure. The additional cost of $118,000 per developable acre would preclude the subdivision from being implemented and would preclude the project from achieving an important part of the project purpose.

Evaluation of Alternative B1, B2, and B3 with 25' Buffers and Culverts

At the request of the Corps of Engineers, the applicant also evaluated the possibility of avoiding the drainage features using only 25-foot buffers (as opposed to the standard 75 feet that is proposed throughout the FSPA) and culverts (in lieu of clear spans) to reduce additional costs and minimize the amount of development lost to open space.

Project Purpose

Alternative B1 with 25-foot Buffers and Culverts

Avoiding the seasonal swale that bisects this small subdivision would cause the loss of four lots or 11% of the proposed lots (Figure 26. *Carpenter Ranch Alternative B1 Lotting with 25-foot Buffers and Culverts*). These changes would have a negative affect on the layout and efficiency of proposed subdivision.

Alternative B2 with 25-foot Buffers and Culverts

Although reducing the required buffer to 25 feet would reduce the amount of developable land that would be lost in order to avoid the seasonal swale that bisects the Entertainment District, it would not significantly reduce the lost development acreage due to the meandering nature of the swale. The land uses planned for the Entertainment District would not be able to utilize many of the small "peninsulas" of remnant land that would occur between the curves of the swale. These areas, such as the area between the seasonal swale and the proposed Easton Valley Parkway, could only be squared-off and designated as open space (Figure 27. *Carpenter Ranch Alternative B2 Lotting with 25-foot Buffers and Culverts*).

The amount of land that would be lost to development by preserving the seasonal swale and establishing buffers to minimize indirect impacts would increase the overall cost to develop and increase the cost burden on the remaining developable lands within the Entertainment District. Fragmentation of the Entertainment District is the primary reason that avoiding the swale is not a practicable alternative. As part of the analysis conducted to determine if avoidance of the swale was possible without precluding successful implementation and sustainability of the Entertainment District, several land planners, developers, and commercial real estate brokers were contacted and asked to evaluate the proposed alternative avoidance plan. A summary of comments received follows:

- "The considered linear open space segregates the mixed-use district into several separate parcels, eliminating the cohesive district concept and rendering some of the

parcels infeasible for most users, and therefore unusable. Additional critical challenges are created, such as access and adequate parking . . ." (Jeffery Demure & Associates).

- The Entertainment District is planned to provide a vibrant synergy of a variety of large and small uses, such as a hotel and conference center, residential, retail, restaurants, and a theater. Preservation of the swale:

    - "Damages the continuity and synergy critical among the entertainment district uses (residential, retail, restaurants and the theater)
    - breaks up the district into 4 zones rather than one well planned cohesive district
    - destroys the main street feel and walkable mixed use community
    - separates the continuity of the entertainment district from the regional mall and
    - chops up the mixed use parcels into unusable pieces as the remaining parcels are too small for larger users" (Lewis Investments Company, LLC.).

- Preserving the swale segregates the mixed-use district into several separate parcels, eliminating the cohesive district concept and rendering some of the parcels infeasible for most users, and therefore unusable. "Good planning requires that the different districts within the development (residential, retail, restaurants and the theater) have continuity and synergy. The proposed wetland corridor will impede this and will also destroy the main street feel and walk-ability of the mixed use community" (Citivest Commercial and Residential Real Estate.

Copies of the letters from commercial land planners, brokers and developers are included in Attachment C – *Letters from Land Planners, Commercial Real Estate Brokers, and Developers.*

<u>Alternative B3 with 25-foot Buffers and Culverts</u>

Avoiding the seasonal swale that bisects this small subdivision would cause the loss of 16 lots or 12% of the proposed lots (Figure 28. *Carpenter Ranch Alternative B3 Lotting with 25-foot Buffers and Culverts*). These changes would have a negative affect on the layout and efficiency of proposed subdivision.

Logistics

Alternatives B1, B2 and B3 with 25-foot Buffers and Culverts

The additional grading and retaining walls that would be necessary to allow partial development in this area present logistical challenges. Slopes adjacent to the drainage and water quality basins would result in additional grading efforts in order to install culverts, create water quality basins and provide catch-slopes to the existing grade of the open space areas or to the proposed elevations of the subdivisions and Entertainment District. (Figure 29. *Carpenter Ranch Alternative B1 with 25-foot Buffers and Culverts – Slope Analysis*) presents the slope constraints in reflection to Alternative B1. Avoidance of the swale presents problems with circulation, parking and connectivity of the Entertainment District components. The proposed preserve "breaks up the District into 4 zones rather than one well planned cohesive district." (Lewis Investment Company, LLC).

Costs

Alternative B1 with 25-foot Buffers and Culverts

The alternative would result in additional costs. These costs are associated with the installation of the culverts at the drainage crossing and retaining walls adjacent to the feature. As a result of having less development land to spread the Backbone Infrastructure Cost burden, together with the cost of additional infrastructure required to incorporate this alternative, the cost to develop the Site has increased by $755,350. This additional cost would increase the cost per developable acre by $24,191. Attachment E provides land use and cost impacts associated with implementing this alternative. Figure 26 presents a conceptual lotting plan and additional open space areas that would be necessary to accommodate the additional avoided wetlands and preserve areas.

Alternative B2 with 25-foot Buffers and Culverts

The alternative would result in additional costs. These costs are associated with the installation of culverts at three drainage crossings and retaining walls adjacent to the feature. As a result of having less development land to spread the Backbone Infrastructure Cost burden, together with the cost of additional infrastructure required to incorporate this alternative, the cost to develop the Site has increased by $5,539,700. This additional cost would increase the cost per developable acre by $95,621. Attachment F provides land use and cost impacts associated with implementing this alternative. Figure 27 presents a conceptual lotting plan and additional open space areas that would be necessary to accommodate the additional avoided wetlands and preserve areas.

Although the amount of land that would be lost to development by preserving the seasonal swales and establishing buffers to minimize indirect impacts would increase the overall cost to develop and increase the cost burden on the remaining developable lands within the Entertainment District. Experts in commercial development and design have indicated that having to provide a meandering open space corridor through the center of the Entertainment District would have a domino effect on grading and parking structure costs, and would render the project infeasible. "The loss of land would likely require us to build a parking structure which would also be cost prohibitive and make the project economically infeasible" (Hopkins Real Estate Group).

Alternative B3 with 25-foot Buffers and Culverts

The alternative would result in additional costs. These costs are associated with the installation of the culvert at the drainage crossing and retaining walls adjacent to the feature. As a result of having less development land to spread the Backbone Infrastructure Cost burden, together with the cost of additional infrastructure required to incorporate this alternative, the cost to develop the Site has increased by $587,000. This additional cost would increase the cost per developable acre by $8,894. Attachment G provides land use and cost impacts associated with implementing this alternative. Figure 28 presents a conceptual lotting plan and additional open

space areas that would be necessary to accommodate the additional avoided wetlands and preserve areas.

Environmental Impacts

Alternative B1 with 25-foot Buffers and Culverts

This alternative would result in only 0.026 acres of additional seasonal wetland swale avoidance (Figure 30. *Carpenter Ranch Alternative B1 with 25-foot Buffers and Culverts*). The drainage swale is not part of a significant drainage system or corridor. The drainage swale originates at the proposed intersection of Easton Valley Parkway and the entrance to the subdivision.

Using a culvert to cross the drainage swale reduces the cost compared to a bridge or clear-span but also results in additional impacts and causes fragmentation of the drainage feature. Catch-slopes from the culvert and from the entrance road would impact nearly half of the length of the drainage swale being avoided. The result would be an approximately 150' drainage, isolated from other open space situated in the middle of a residential subdivision. The majority of this isolated open space "corridor" would be bordered by backyard fences and would only be visible to the public from the roads at either end. These types of areas have often proved to become dumping grounds for lawn waste and/or garbage and can be "attractive nuisances" in that their isolated, hidden nature can attract graffiti artists and other individuals or activities that are not compatible or appropriate for a single-family residential neighborhood.

The drainage swale would also lose most of its watershed resulting in direct rainfall being its only water source. The small watershed that exists above the drainage will be lost due to the construction of Easton Valley Parkway and since runoff from the Parkway and subdivision must be treated before entering the swale. The majority of the water that falls on the subdivision would be released back into the swale only after it has been treated in the water quality basin that would need to be located at the downstream end of the swale.

The small, fragmented preserve (preserving only 0.026 acres of seasonal swale) that would result from avoiding this drainage within the subdivision would be subject to many indirect

impacts. Although not directly filled or impacted, the indirect affects that are likely to occur from the loss of hydrology and inadequate size and buffers would negate any environmental benefit that may be realized form avoiding this feature.

Alternative B2 with 25-foot Buffers and Culverts

This alternative would result in 0.639 acres of additional seasonal wetland swale avoidance (Figure 31. *Carpenter Ranch Alternative B2 with 25-foot Buffers and Culverts*). The drainage swale is not part of a significant drainage system or corridor. As shown in Figure 32, the drainage swale receives a small amount of runoff from a culvert under Highway 50 that conveys freeway runoff and a very small amount of rainfall from a ditch located adjacent to the highway. A small watershed in the northern portion of the proposed Regional Mall site that has been channelized on south side of Hwy 50 constitutes the majority of the drainage swale's water source.

Under this alternative, the drainage swale would lose most of its watershed, as rainfall that lands on the area where the Regional Mall will be located must be piped to the detention/water quality basin located south of Easton Valley Parkway, treated and released into the larger tributary to Alder Creek. The small watershed that exists north of Highway 50 would be the only water source. All rainfall on adjacent parcels would also be required to be piped to the water quality/detention basin, bypassing the avoided drainage swale completely.

Using culverts to cross the drainage swale reduces the cost compared to bridges or clear-spans but also results in additional impacts and causes fragmentation of the drainage feature. Avoiding this drainage would result in three small open space parcels situated in the middle of an entertainment district and/or adjacent to a major thoroughfare. These open space "corridors" would be bordered by commercial/retail land uses and would provide little wetland or wildlife functions and values.

The small preserve areas (preserving only 0.639 acres of seasonal swale) that would result from avoiding this drainage within the Entertainment District would be subject to many indirect impacts. Although not directly filled or impacted, the indirect affects that are likely to occur

from the loss of hydrology would negate any environmental benefit that may be realized form avoiding this feature.

Alternative B3 with 25-foot Buffers and Culverts

This alternative would result in only 0.098 acres of additional seasonal wetland swale avoidance (Figure 33. *Carpenter Ranch Alternative B3 with 25-foot Buffers and Culverts*). The drainage swale is not part of a significant drainage system or corridor. The drainage swale originates just north of Easton Valley Parkway within the proposed Regional Mall site.

Using a culvert to cross the drainage swale reduces the cost compared to a bridge or clear-span but also results in additional impacts and causes fragmentation of the drainage feature. Avoiding this drainage would result in a very small open space parcel situated in the middle of a residential subdivision. The majority of this open space "corridor" would be bordered by backyard fence. These types of areas have often proved to become dumping grounds for lawn waste and/or garbage.

The drainage swale would also lose most of its watershed resulting in direct rainfall being its only water source. The small watershed that exists above the drainage will be lost due to the construction of Easton Valley Parkway, the Regional Mall and the subdivision itself because runoff from these areas must be treated before entering the swale. All rainfall would be required to be piped to the water quality/detention basin located south of the subdivision, bypassing the avoided drainage completely.

The small, fragmented preserve (preserving only 0.098 acres of seasonal swale) that would result from avoiding this drainage within the subdivision would be subject to many indirect impacts. Although not directly filled or impacted, the indirect affects that are likely to occur from the loss of hydrology and inadequate size and buffers would negate any environmental benefit that may be realized form avoiding this feature.

Summary

Alternative B1, B2, and B3 with 25-foot Buffers and Culverts

All three alternatives involved analyzing the possibility of avoiding small drainage swales that bisected various components of the Carpenter Ranch project. Using culverts and minimum buffers of 25' lowered the cost (as compared to the original Alternatives B1, B2, and B3 with 75' buffers and clear-span crossings) and minimized the amount of land lost due to avoiding the drainage features, but none proved to provide any meaningful additional avoidance and all three alternatives resulted in significant indirect impacts to the wetland features.

The most significant indirect impact was related to hydrology. All three alternatives resulted in drainages having their watersheds eliminated or compromised to the point where they would most likely not be able to continue to support their existing wetland functions and values. The minimal watersheds of the drainages made it impossible to achieve the project purpose while at the same time conserving enough of the watershed to hydrologically support the features. Major components of the Carpenter Ranch project that cannot be relocated (such as Easton Valley Parkway and the Regional Mall/Entertainment District) compromise the drainages' watersheds. Topography constraints precluded the possibility of treating water and releasing it into the upper reached of the drainages.

Other indirect impacts would likely occur as a result of the small size of the preserve areas, the fragmented nature of each, and inadequate buffers from some of the surrounding land uses. The costs of providing the additional avoidance, even if the indirect impacts were not an issue, are not reasonable considering the amount of wetland acreage avoided. Alternative B1 would avoid direct impacts to 0.026 acres at a cost of $82,100 per acre, Alternative B2 would avoid direct impacts to 0.639 at a cost of $161,980 per acre, and Alternative B3 would avoid direct impacts to 0.098 acres at a cost of $25,630 per acre. Alternative B2 would negatively affect design, synergy and function of the Regional Mall/Entertainment District, the most important component of Carpenter Ranch project purpose.

Alternative C

Overview

Alternative C evaluates the possibility of avoiding a large seasonal swale feature and associated habitat in the northwestern portion of the property, by relocating the alignment of the proposed Easton Valley Parkway (Figure 34. *Carpenter Ranch Alternative C*). This alternative avoids 1.008 additional acres of wetlands including seasonal wetland, seasonal wetland swales, and creek/channel. This alternative results in the loss of 2.2 acres of planned development. There would be approximately $835,000 ($329,000 for project and $506,000 for backbone infrastructure) in additional construction costs, $225,000 in additional development costs, and $1,060,000 ($554,000 for project and $506,000 for backbone) in total costs to avoid impacting the wetlands/waters. The increase in cost is primarily related to additional grading required to move the Parkway further south where there is more topography and to the cost of installing retaining walls that would be required.

This alternative is also evaluated independently in the 404(b)(1) prepared for the Backbone Infrastructure project for which the City of Folsom is the applicant. It has been included in this analysis as the changes to the Easton Valley Parkway alignment affect land uses on Carpenter Ranch.

Project Purpose

This alternative would not affect the project purpose (Figure 35. *Carpenter Ranch Alternative C - Conceptual Land Use Plan Detail*).

Logistics

In order to preserve the seasonal wetland swale, several horizontal and vertical alignments of Easton Valley Parkway, a major arterial through the Plan Area, were studied. The alignment study of Easton Valley Parkway determined that the wetland feature cannot be avoided while providing a minimum 75-foot buffer. This is due to the design standards for major arterials, the steep terrain, and the intersection locations of Easton Valley Parkway with Oak Avenue and

Prairie City Road. It was determined that the wetland feature can be substantially avoided by adjusting the horizontal and vertical alignment of Easton Valley Parkway. However, slope embankments and a retaining wall would be required to be within several feet of the wetland feature and a Class 1 Trail would need to cross portions of the feature in order to implement any type of avoidance. Also, the realignment of Easton Valley Parkway takes development land away from the single family land use associated with Lot 39. In addition to additional backbone infrastructure, Lot 39 requires a revised site plan and additional on-site infrastructure to implement this alternative.

Costs

In order to quantify the cost impacts of implementing this alternative an estimate was prepared that compares the Site development cost of the Proposed Project and this Alternative. The unit prices from the Preliminary Cost Estimate, Folsom Plan Area, Proposed Project Estimate dated January 30, 2009 were utilized for this cost impacts analysis.
The cost impacts analysis is divided into three sections. One section identifies the development cost impacts due to the loss of use of the Site. Avoiding a wetland feature can reduce the number of single family units that can be yielded per site. Since the Site development area has been reduced, the cost to develop the site has also been reduced. This cost impact analysis incorporates these cost reductions.

The second section of the cost impacts analysis quantifies the Project Specific One-Time Cost Burdens. The size and cost of the backbone infrastructure improvements such as water treatment plants, regional sanitary sewer pump stations, drainage detention basins, freeway interchanges, arterial and collector roadways does not change due to the loss of approximately 17 single family units. Therefore, these costs are spread over less units increasing there portion of the backbone infrastructure burden. The cost for providing the required public facilities and services does change due to the loss of single family units since the potential for use of these facilities is reduced. The cost of public facilities and services such as fire and police personnel, stations and equipment, libraries, community centers and similar public amenities are reduced due to the smaller population within the Plan Area. As such, both of these revised one-time cost burdens have also been included in the cost impacts analysis.

The third section of the cost impacts analysis identifies the additional cost of on-site and off-site infrastructure improvements that would be required under this Alternative to serve the Site. Additional sewer, water, drainage and roadway infrastructure improvements such as bridges, boring and jacking of utilities under the wetland buffer corridor and additional storm drainage water quality/detention basins have been quantified. Therefore, the cost of the additional infrastructure to implement this Alternative into the Site has been included in the cost impacts analysis.

As a result of having less development land to spread the Backbone Infrastructure Cost burden over together with the cost of additional infrastructure required to incorporate the Wetland Buffer Corridor, the cost to develop the Site has increased by $554,000. This additional cost would increase the cost per developable acre by $2,097. Attachment H provides land use and cost impacts associated with implementing this alternative. Figure 35 presents a conceptual realignment (and affects on the Land Use Plan) that would be necessary to accommodate the additional avoided wetlands and preserve areas.

Environmental Impacts

Carpenter Ranch Alternative C would result in a reduction of impacts to wetlands and a minor increase in open space acreages by avoiding direct impacts to a seasonal wetland, a seasonal wetland swale, and a creek/channel feature that is a tributary of Alder Creek.

This alternative would result in avoiding direct impacts to 0.001-acre of seasonal wetland, 0.977 acres of seasonal wetland swale, and 0.030-acre of creek/channel, and result in an additional 2.2 acres of open space. The preservation of wetlands and associated wetland preserve and open space areas would increase the acreages and overall values of the Alder Creek wetland preserve corridor, allowing for greater connectivity of designated open areas within the project area and effectively serving as a larger corridor for wildlife use and movement.

The shifting of the Easton Valley Parkway alignment to the south under this alternative would avoid an additional 1.008 acres of wetland/waters and would also result in 9.74 acres of additional open space north of the proposed road. However, the alternative would also require

impacts to approximately 6.84 acres of previously-proposed open space to the south of the road (Table 5).

Table 5 – Proposed Impact Acreages and Alternative C

	Proposed Project			Infrastructure Impacts**		Alternative	
Type	Existing*	Avoidance	Project Impacts	Backbone Infrastructure	Interchange Impacts	Additional Avoidance***	Impacts
Vernal Pool	1.155	0.079	0.773	0.289	0.014	0.000	0.773
Seasonal Wetland	0.121	0.112	0.008	0.001	0.000	0.001	0.007
Seasonal Wetland Swale	8.932	1.417	4.340	3.175	0.001	0.977	3.363
Seep	1.498	0.263	1.235	0.000	0.000	0.000	1.235
Marsh	0.092	0.078	0.014	0.000	0.000	0.000	0.014
Creek/Channel	14.501	11.550	1.252	1.101	0.598	0.030	1.222
Intermittent Drainage	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ditch	1.367	0.317	0.817	0.232	0.002	0.000	0.817
Pond	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Willow Scrub	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total:	**27.666**	**13.815**	**8.438**	**4.798**	**0.615**	**1.008**	**7.430**

**Acreages include 0.019 acre of non-jurisdictional vernal pool
**The Backbone Infrastructure and Interchange Impacts are included as the delineation for this project included these areas.
*** Additional avoidance of 1.008 acres occurs within Backbone Infrastructure.

Alternative C shifts a portion of the proposed Easton Valley Parkway southward away from the Alder Creek corridor and a large seasonal wetland area that is hydrologically connected to Alder Creek. The preservation of wetlands and associated wetland preserve and open space areas would increase the overall values of the Alder Creek wetland preserve corridor, allowing for greater connectivity of designated open areas within the Carpenter Ranch Project and effectively serving as a larger corridor for wildlife use and movement.

The shift would result in additional direct impacts to creek/channel features and associated wetland preserve and open space to the south, but is generally negated by shifting impacts from north to south on either side of the shift. The shift would also result in minor infringements to wetland preserve and open space areas due to modifications that result in slight expansions of the infrastructure elements in areas along the northern side of the proposed shift. These changes, however are minimal and are negated by the overall increase of wetland preserve and open space within this alternative.

This alternative also excludes a small area on the southern edge of the shift at the confluence of two creek/channel features. This alternative element retracts direct impacts to creek/channel habitat and maintains the existing integrity of the channel confluence and associated wetland preserve and open space acreages.

The overall affect of this alternative would avoid 1.008 acres of impact to jurisdictional Waters of the U.S. and increase open space by 2.2 acres.

Summary

Alternative C would not affect the project purpose of the Carpenter Ranch project. Approximately 1.001 acres of additional avoidance can be achieved by shifting the alignment of Easton Valley Parkway to the south approximately 200 feet just west and east of its intersection with the proposed Oak Avenue extension. In order to accomplish this additional avoidance, a retaining wall on the north side of Easton Valley Parkway will be necessary and standard buffer widths would be not be feasible. The Class 1 bike trail would also need to cross the avoided seasonal wetland swale at two of its narrowest points. This alternative would result in approximately $1,060,000 ($554,000 for project and $506,000 for backbone) in additional costs and cause the loss of approximately 2.2 acres of residential development, but is otherwise logistically feasible.

SUMMARY/CONCLUSION

A thorough evaluation of the possibility of revising the proposed project to further avoid wetlands/waters at five locations within the Carpenter Ranch project was conducted at the request and in consultation with the Corps of Engineers. Following is a brief discussion of the analysis of each Alternative and results are summarized in Table 6 below

Alternative A involved avoiding impacts to a small drainage that bisects the westernmost business park parcel in the northeast corner of the project. It was determined that avoiding these features would not be feasible. The open space corridor that would be required to adequately protect this feature would effectively preclude the use of this area for development. The additional infrastructure required to access and support any kind of development on the remnant parcels would render the site unable to provide any kind of development at competitive prices. In addition, the potential additional avoided wetland acreage totals less than four one-hundredths of an acre (0.037 ac.). There are no other areas within the carpenter ranch project site could practicably support the business park component without similar or

greater wetland impacts. Relocating the business park to other areas already planned for development would affect the project purpose as the Regional Mall, Entertainment District and supporting residential subdivisions are all located to make the project function economically (phasing of sales and infrastructure costs) and properly in future (appropriate mix/location of land uses).

Alternative B (B1, B2 and B3) evaluated the possibility of further avoiding three drainages in the central portion of the project. It was determined that avoiding these features (cumulatively or individually) would not be practicable. Significant components of the project purpose would not be feasible if these additional avoidance areas were implemented. Avoidance of two of the drainages (totaling less than 0.25 acres) would add significant infrastructure costs and reduce residential development acreages such that it would not be feasible to develop the land at competitive prices. Avoidance of the third drainage (Alternative B2) would significantly affect the entertainment district of the proposed project – an integral component of the Carpenter Ranch project. The location of the drainages makes avoiding impossible without significant adverse affects to the project purpose. Again, there are no other areas within the Carpenter Ranch project site that could practicably support the residential components (Alternatives B1 and B3) without similar or greater wetland impacts. Relocating the residential to other areas already planned for development would affect the project purpose as the Regional Mall, Entertainment District and business park land use components are all located to make the project function economically (phasing of sales and infrastructure costs) and properly in future (appropriate mix/location of land uses).

Alternative B1, B2, and B3 were also analyzed using 25' wetland buffers (in lieu of the 75' buffers that have been proposed throughout the Folsom Specific Plan Area) and using culverts at required crossings as opposed to using bridges and/or clear-spans. This alternative was developed because initial review showed that the significant amount of developable land that was lost using the 75' buffers and the increased costs associated clear-spans may preclude Alternative A from being considered a practicable alternative. None of the Alternatives provided additional avoidance without significant unavoidable indirect impacts to the drainages feature being studied. Inadequate hydrology, incompatible adjacent land uses and fragmentation were the primary reasons that the alternatives were not considered viable alternatives.

Alternative C investigated the possibility of realigning the proposed Easton Valley Parkway to avoid a large seasonal wetland swale in the northwest portion of the project. An alternative that would result in 1.008 acres of additional avoidance of wetlands/waters of the U.S. was developed that entailed shifting the road alignment approximately 200 feet to the south. This alternative would result in additional costs totaling approximately $0.5 million, due to the additional grading and infrastructure that would be necessary to implement the realignment. The additional infrastructure costs are primarily related to the additional grading, the required retaining wall, and trail crossings for the Class 1 trail system that runs along the Alder Creek corridor. Although there would be additional costs, this alternative may be practicable if the Corps deems the resultant buffer between the Easton Valley Parkway retaining wall and Alder Creek sufficient.

Table 6 – Summary of Analysis of Alternatives to Minimize Impacts to Wetlands and Waters of the U.S.*

	Potential Wetland Avoidance	Development Land Lost	Additional Cost to Avoid Impact	Cost per Acre of Avoided Wetland	Additional Cost per Acre of development	Project Purpose	Cost 1	Cost 2	Cost 3	Logistics	Environmental/Waters	Environmental/Species	LEDPA
Alternative A	0.037 ac.	3.5 ac.	$3.7 M	$100 M	$79 K	Yes	No	No	No	Yes	No	No	No
Alternative A w/ 25-ft Buffer	0.028 ac.	3.0 ac.	$1.9 M	$68 M	$65 K	Yes	No	No	No	Yes	No	No	No
Alternative B	1.010 ac.	25.1 ac.	$16.5 M	$16 M	$143 K	No	No	No	No	No	No	No	No
Alternative B1	0.043 ac.	3.2 ac.	$2.8 M	$65 M	$94 K	Yes	No	No	No	Yes	No	No	No
Alternative B1 w/ 25-ft Buffer	0.026 ac.	1.0 ac.	$755 K	$29 M	$24 K	Yes	Yes	No	Yes	Yes	No	No	No
Alternative B2	0.832 ac.	14.0 ac.	$11.7 M	$14 M	$170 K	No	No	No	No	No	No	No	No
Alternative B2 w/ 25-ft Buffer	.639 ac.	8.6 ac.	$5.5 M	$8.6 M	$96 K	No	No	No	No	No	No	No	No
Alternative B3	0.135 ac.	7.9 ac.	$2 M	$14.8 M	$118 K	Yes	No	No	Yes	Yes	No	No	No
Alternative B3 w/ 25-ft Buffer	0.098 ac.	1.5 ac.	$587 K	$6 M	$9 K	Yes	Yes	No	Yes	Yes	No	No	No
Alternative C	1.008 ac.	2.2 ac.	$554 K	$549 K	$ 2 K	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes

*See individual alternative analysis for Alternative-specific details

Project Purpose

– Can the alternative be implemented in a location or configuration that would support the project purpose?

Cost

1 – Can the alternative be implemented without costing substantially more than that of the proposed project alternative?

2 – Is the additional cost reasonable related to amount of additional wetland avoidance?

3 – Can the alternative be implemented without increasing the cost per developable acre to point where the project component is no longer economically feasible?

Logistics

– Does the alternative conform to the land use plan circulation design without presenting other logistical challenges?

Environmental/Waters

– Does the alternative have significantly less impacts on waters of the United States than the proposed project alternative?

Environmental/Species

– Does the alternative have significantly less impacts on federally listed species than the proposed project alternative?

LEDPA

– Does the Alternative represent the Least Environmentally Damaging Practicable Alternative?

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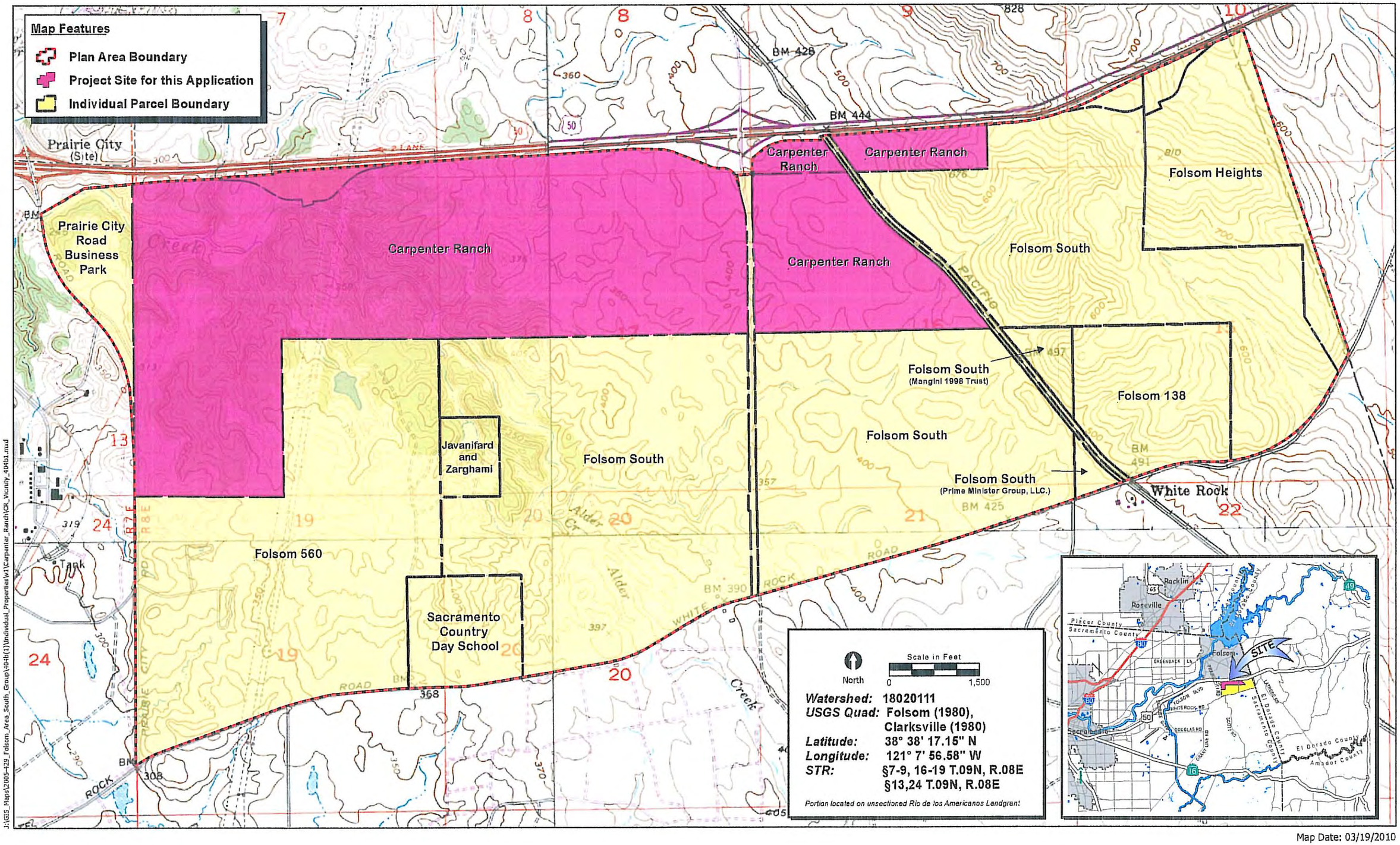

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Map Date: 03/19/2010

Figure 1. Site and Vicinity

2009-174 Carpenter Ranch

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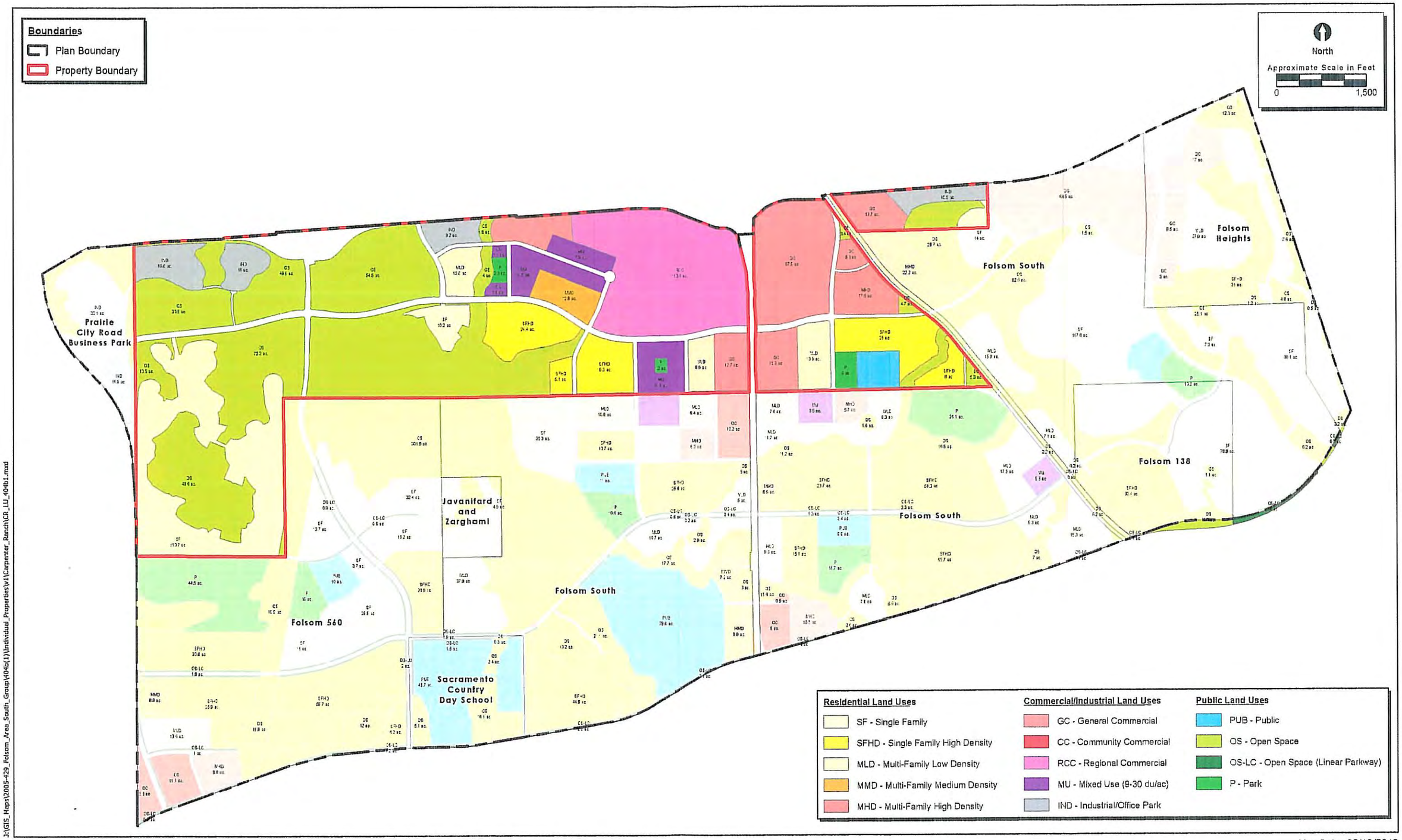

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Map Date: 03/19/2010

Figure 2. Carpenter Ranch Proposed Project Land Use Plan

2009-174 Carpenter Ranch

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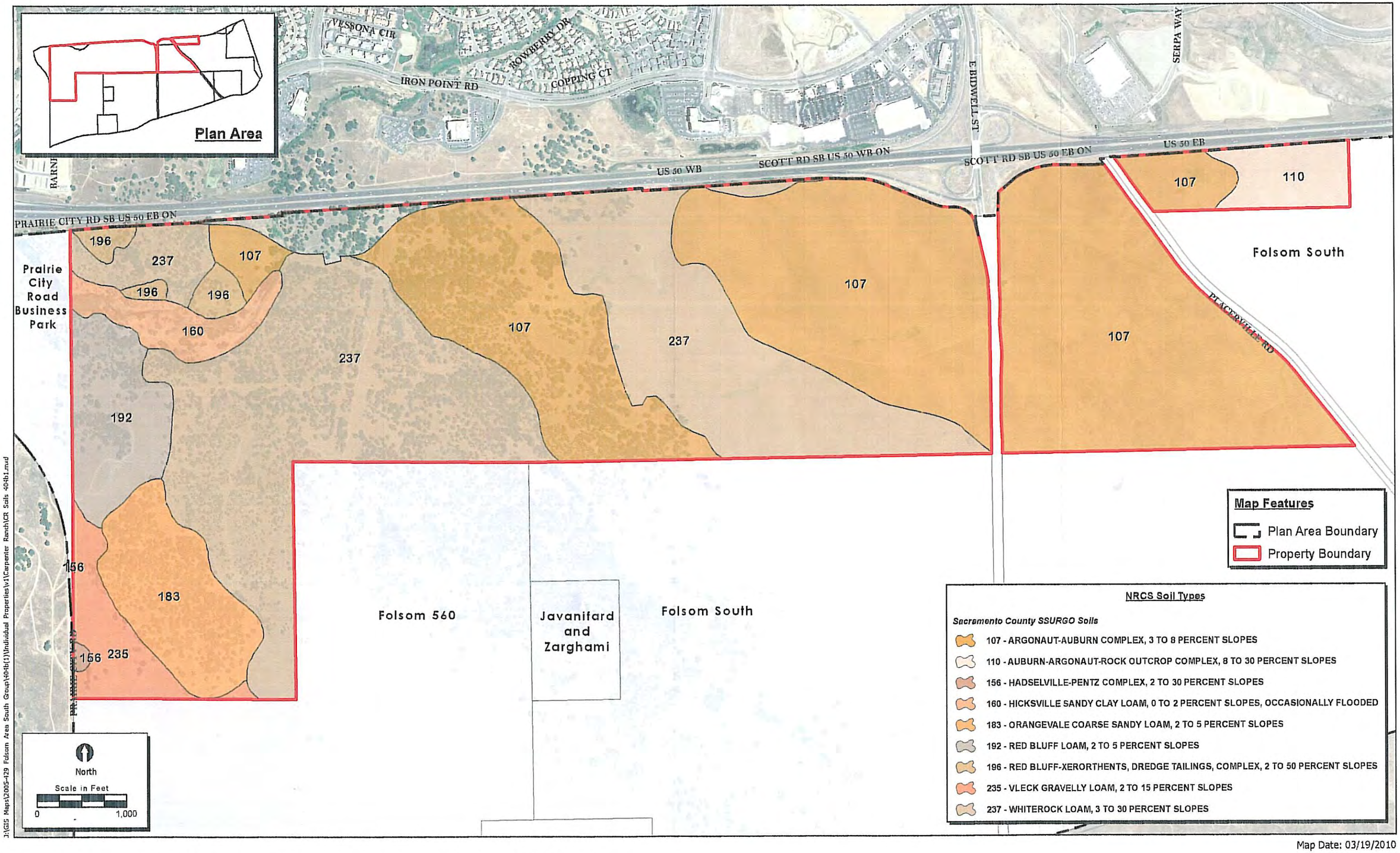

Map Date: 03/19/2010

Figure 3. Carpenter Ranch - Natural Resources Conservation Service (NRCS) Soil Types

2009-174 Carpenter Ranch

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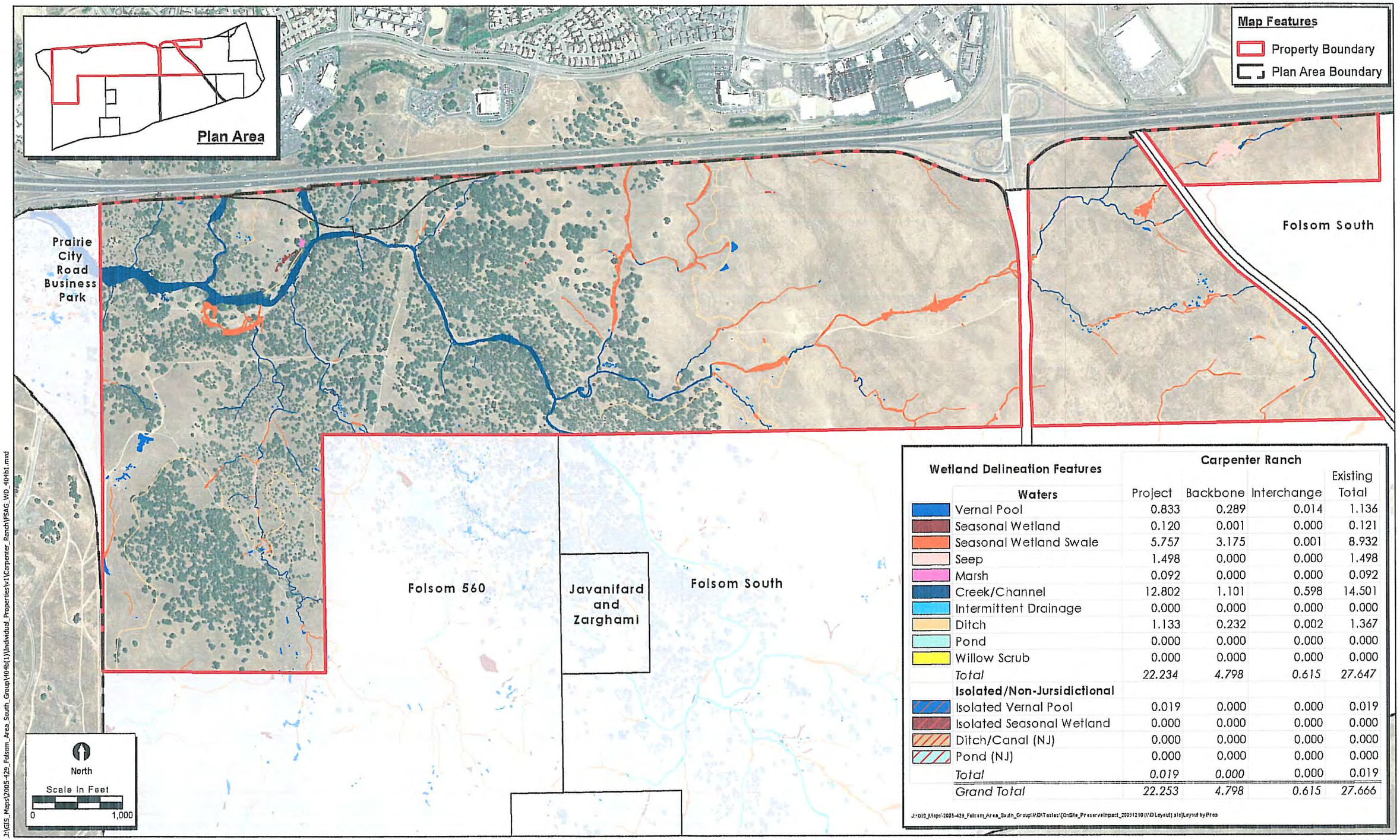

Wetland Delineation Features	Carpenter Ranch			
Waters	Project	Backbone	Interchange	Existing Total
Vernal Pool	0.833	0.289	0.014	1.136
Seasonal Wetland	0.120	0.001	0.000	0.121
Seasonal Wetland Swale	5.757	3.175	0.001	8.932
Seep	1.498	0.000	0.000	1.498
Marsh	0.092	0.000	0.000	0.092
Creek/Channel	12.802	1.101	0.598	14.501
Intermittent Drainage	0.000	0.000	0.000	0.000
Ditch	1.133	0.232	0.002	1.367
Pond	0.000	0.000	0.000	0.000
Willow Scrub	0.000	0.000	0.000	0.000
Total	*22.234*	*4.798*	*0.615*	*27.647*
Isolated/Non-Jursidictional				
Isolated Vernal Pool	0.019	0.000	0.000	0.019
Isolated Seasonal Wetland	0.000	0.000	0.000	0.000
Ditch/Canal (NJ)	0.000	0.000	0.000	0.000
Pond (NJ)	0.000	0.000	0.000	0.000
Total	*0.019*	*0.000*	0.000	0.019
Grand Total	*22.253*	*4.798*	*0.615*	*27.666*

Map Date: 03/19/2010

Figure 4. Wetland Delineation

2009-174 Carpenter Ranch

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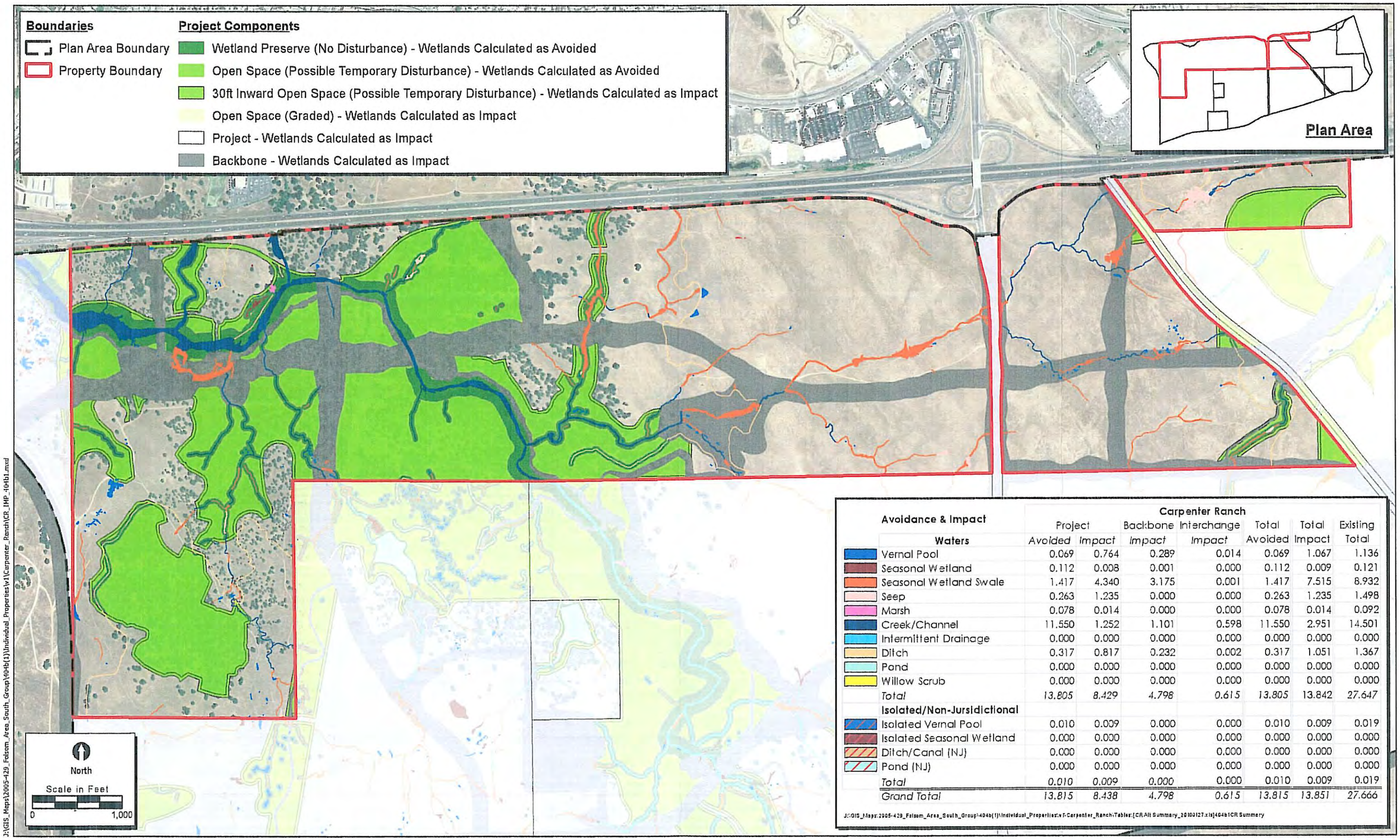

Avoidance & Impact	Carpenter Ranch						
	Project		Backbone	Interchange	Total	Total	Existing
Waters	Avoided	Impact	Impact	Impact	Avoided	Impact	Total
Vernal Pool	0.069	0.764	0.289	0.014	0.069	1.067	1.136
Seasonal Wetland	0.112	0.008	0.001	0.000	0.112	0.009	0.121
Seasonal Wetland Swale	1.417	4.340	3.175	0.001	1.417	7.515	8.932
Seep	0.263	1.235	0.000	0.000	0.263	1.235	1.498
Marsh	0.078	0.014	0.000	0.000	0.078	0.014	0.092
Creek/Channel	11.550	1.252	1.101	0.598	11.550	2.951	14.501
Intermittent Drainage	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ditch	0.317	0.817	0.232	0.002	0.317	1.051	1.367
Pond	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Willow Scrub	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	*13.805*	*8.429*	*4.798*	*0.615*	*13.805*	13.842	*27.647*
Isolated/Non-Jursidictional							
Isolated Vernal Pool	0.010	0.009	0.000	0.000	0.010	0.009	0.019
Isolated Seasonal Wetland	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ditch/Canal (NJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pond (NJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	*0.010*	*0.009*	*0.000*	0.000	0.010	0.009	0.019
Grand Total	*13.815*	*8.438*	*4.798*	*0.615*	*13.815*	*13.851*	*27.666*

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Map Date: 03/19/2010

Figure 5. Carpenter Ranch - Proposed Preserve & Impact Plan

2009-174 Carpenter Ranch

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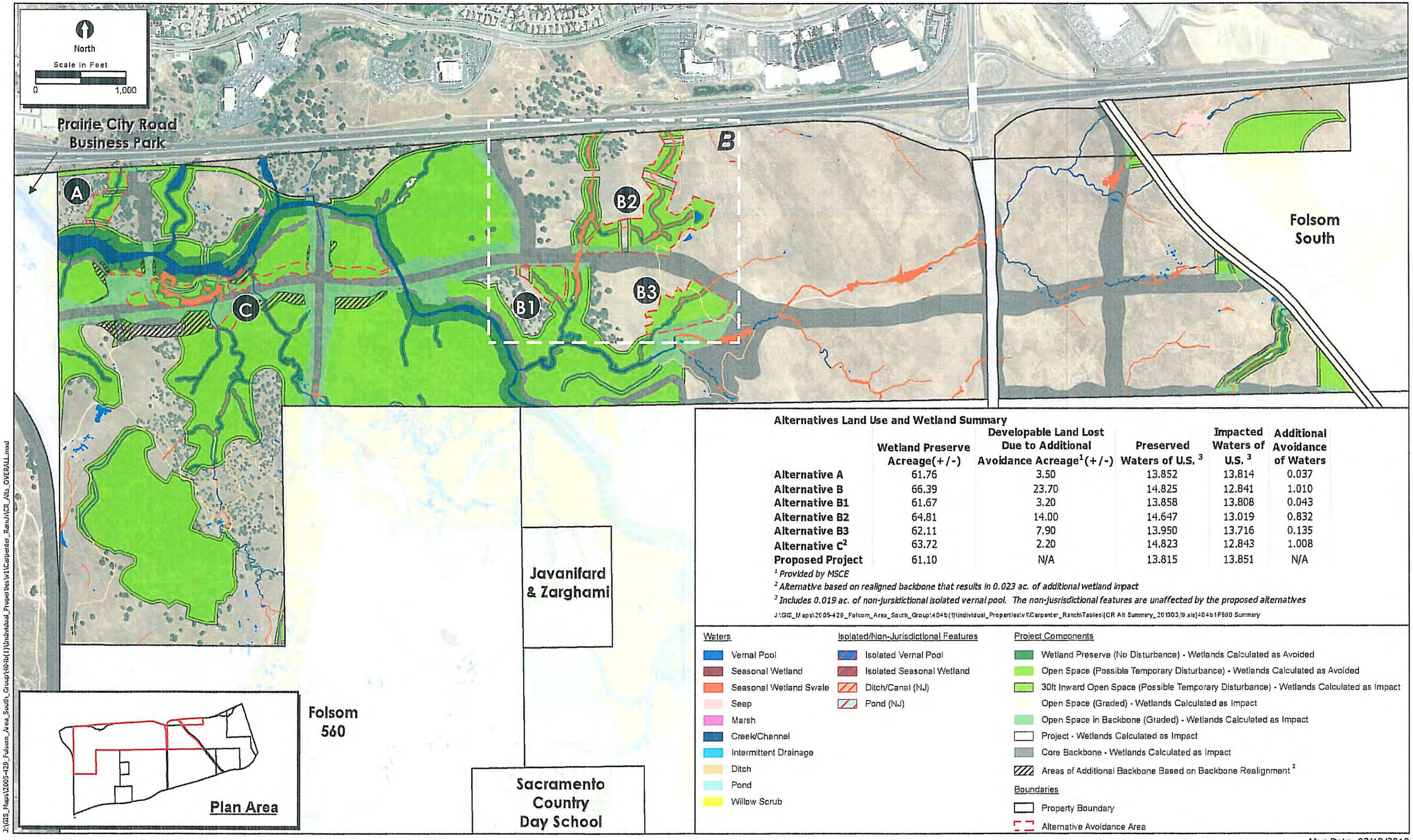

Alternatives Land Use and Wetland Summary

	Wetland Preserve Acreage(+/-)	Developable Land Lost Due to Additional Avoidance Acreage[1](+/-)	Preserved Waters of U.S. [3]	Impacted Waters of U.S. [3]	Additional Avoidance of Waters
Alternative A	61.76	3.50	13.852	13.814	0.037
Alternative B	66.39	23.70	14.825	12.841	1.010
Alternative B1	61.67	3.20	13.858	13.808	0.043
Alternative B2	64.81	14.00	14.647	13.019	0.832
Alternative B3	62.11	7.90	13.950	13.716	0.135
Alternative C[2]	63.72	2.20	14.823	12.843	1.008
Proposed Project	61.10	N/A	13.815	13.851	N/A

[1] *Provided by MSCE*

[2] *Alternative based on realigned backbone that results in 0.023 ac. of additional wetland impact*

[3] *Includes 0.019 ac. of non-jursidictional isolated vernal pool. The non-jusrisdictional features are unaffected by the proposed alternatives*

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Map Date: 03/19/2010

Figure 6. Carpenter Ranch Alternatives - Overview

2009-174 Carpenter Ranch

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Boundaries

- Property Boundary
- Alternative Avoidance Area

Project Components

- Wetland Preserve (No Disturbance) - Wetlands Calculated as Avoided
- Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Impact
- Open Space (Graded) - Wetlands Calculated as Impact
- Open Space in Backbone (Graded) - Wetlands Calculated as Impact
- Project - Wetlands Calculated as Impact
- Core Backbone - Wetlands Calculated as Impact

Waters

- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Marsh
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond
- Willow Scrub

Isolated/Non-Jurisdictional Features

- Isolated Vernal Pool
- Isolated Seasonal Wetland
- Ditch/Canal (NJ)
- Pond (NJ)

Carpenter Ranch Alternative - A

Additional Wetland Avoidance

Waters	*Acres*
Creek/Channel	0.037
Total	*0.037*

Alternatives Land Use and Wetland Summary

	Wetland Preserve Acreage(+/-)	Developable Land Lost Due to Additional Avoidance Acreage[1](+/-)	Preserved Waters of U.S.	Impacted Waters of U.S.	Additional Avoidance of Waters
Alternative A	61.76	3.50	13.852	13.814	0.037
Proposed Project	61.10	N/A	13.815	13.851	N/A

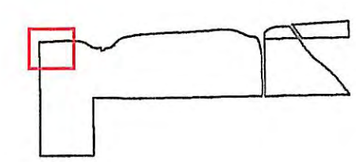
[1] *Provided by MSCE*

North

Scale in Feet

0 200

Carpenter Ranch



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Map Date: 03/19/2010

Figure 7. Carpenter Ranch Alternative A

2009-174 Carpenter Ranch

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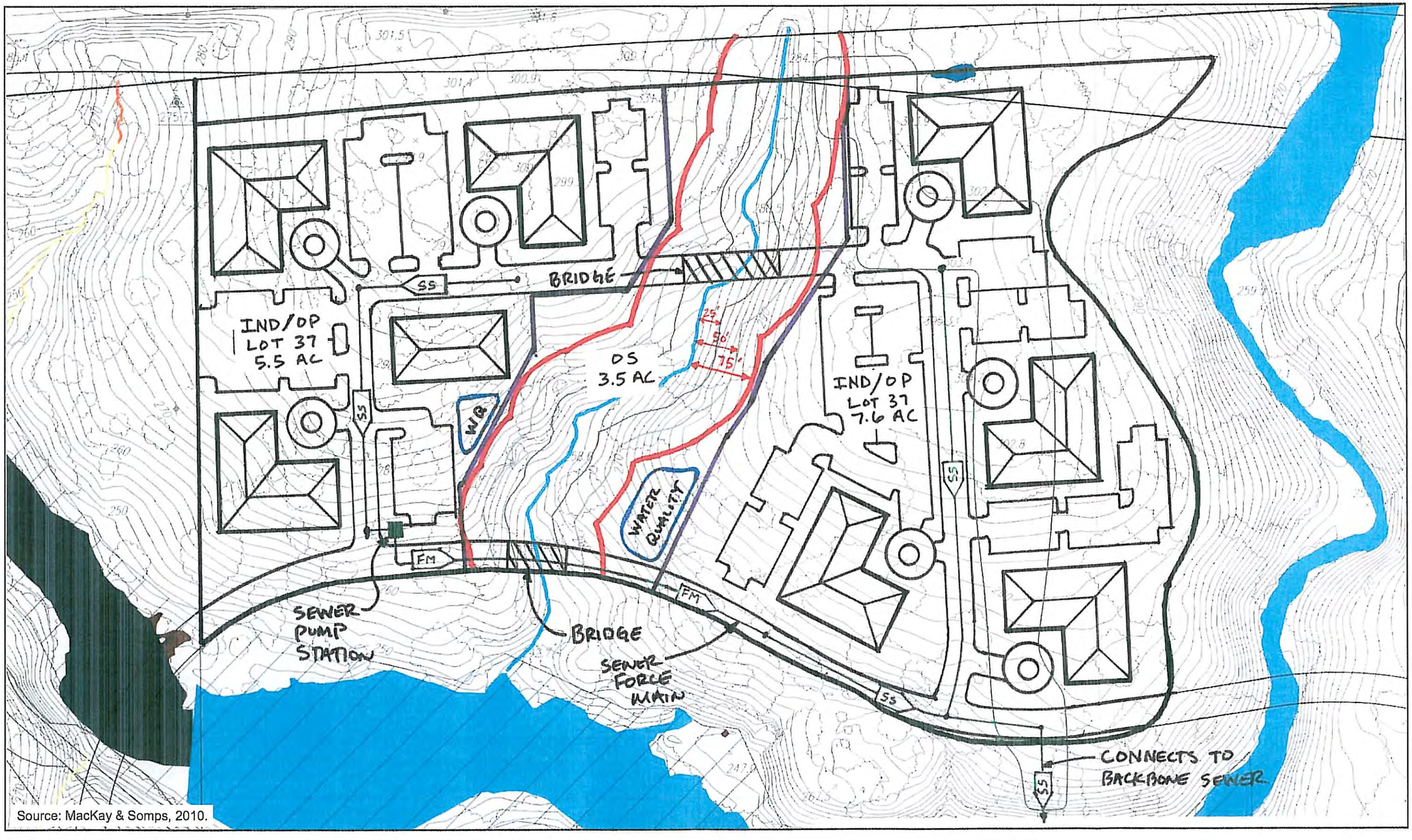
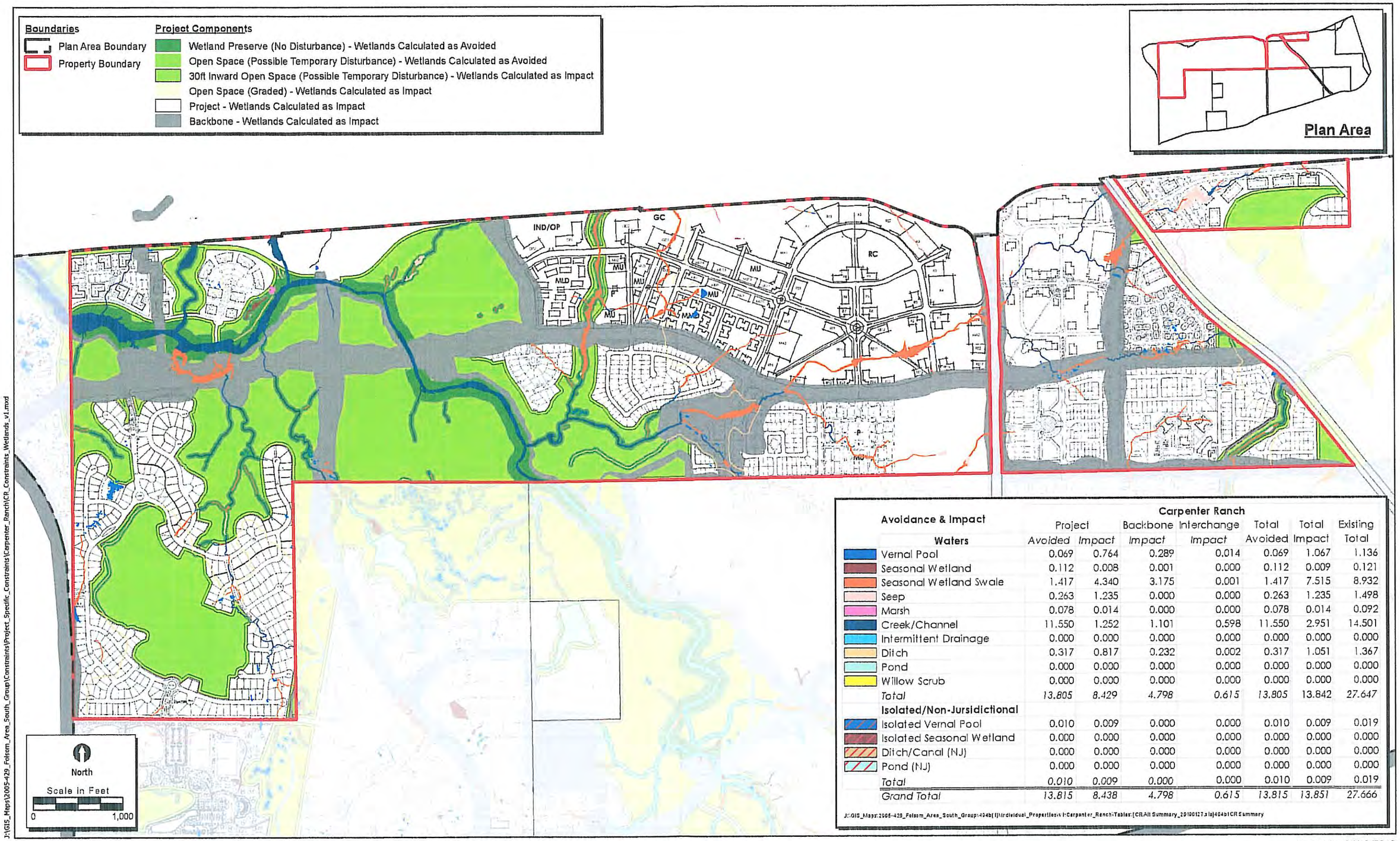


Source: MacKay & Somps, 2010.

Figure 8. Carpenter Ranch Alternative A - Conceptual Land Use Plan



Carpenter Ranch

Avoidance & Impact	Project		Backbone	Interchange	Total	Total	Existing
Waters	*Avoided*	*Impact*	*Impact*	*Impact*	Avoided	Impact	Total
Vernal Pool	0.069	0.764	0.289	0.014	0.069	1.067	1.136
Seasonal Wetland	0.112	0.008	0.001	0.000	0.112	0.009	0.121
Seasonal Wetland Swale	1.417	4.340	3.175	0.001	1.417	7.515	8.932
Seep	0.263	1.235	0.000	0.000	0.263	1.235	1.498
Marsh	0.078	0.014	0.000	0.000	0.078	0.014	0.092
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Ditch	0.317	0.817	0.232	0.002	0.317	1.051	1.367
Pond	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Willow Scrub	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	*13.805*	*8.429*	*4.798*	*0.615*	*13.805*	13.842	*27.647*
Isolated/Non-Jursidictional							
Isolated Vernal Pool	0.010	0.009	0.000	0.000	0.010	0.009	0.019
Isolated Seasonal Wetland	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Ditch/Canal (NJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pond (NJ)	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Total	*0.010*	*0.009*	*0.000*	0.000	0.010	0.009	0.019
Grand Total	*13.815*	*8.438*	*4.798*	*0.615*	*13.815*	*13.851*	*27.666*

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Map Date: 05/12/2010

Figure 9. Carpenter Ranch - Wetland Constraints

2009-174 Carpenter Ranch

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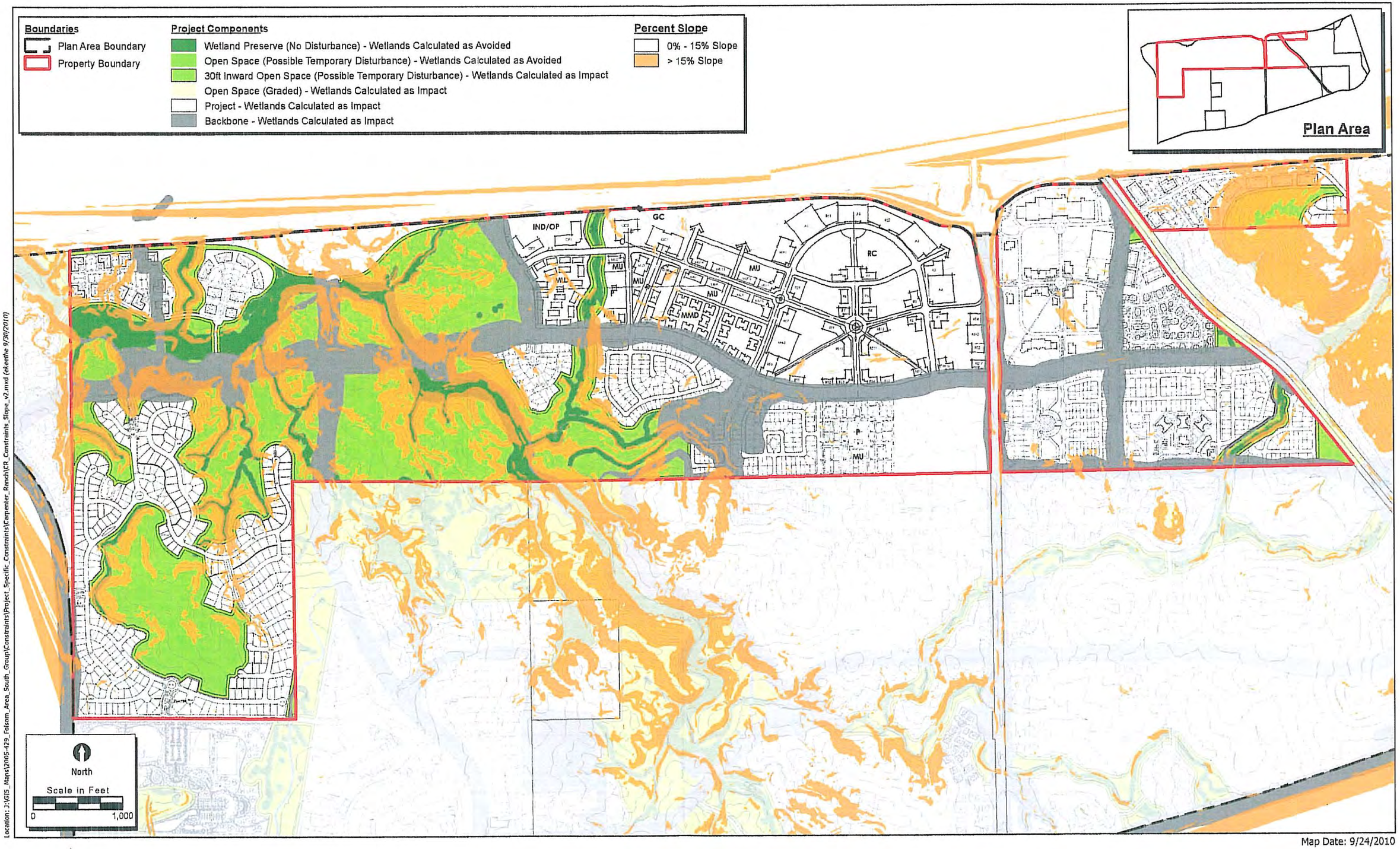

Map Date: 9/24/2010

Figure 10. Carpenter Ranch - Slope Constraints

2009-174 Carpenter Ranch

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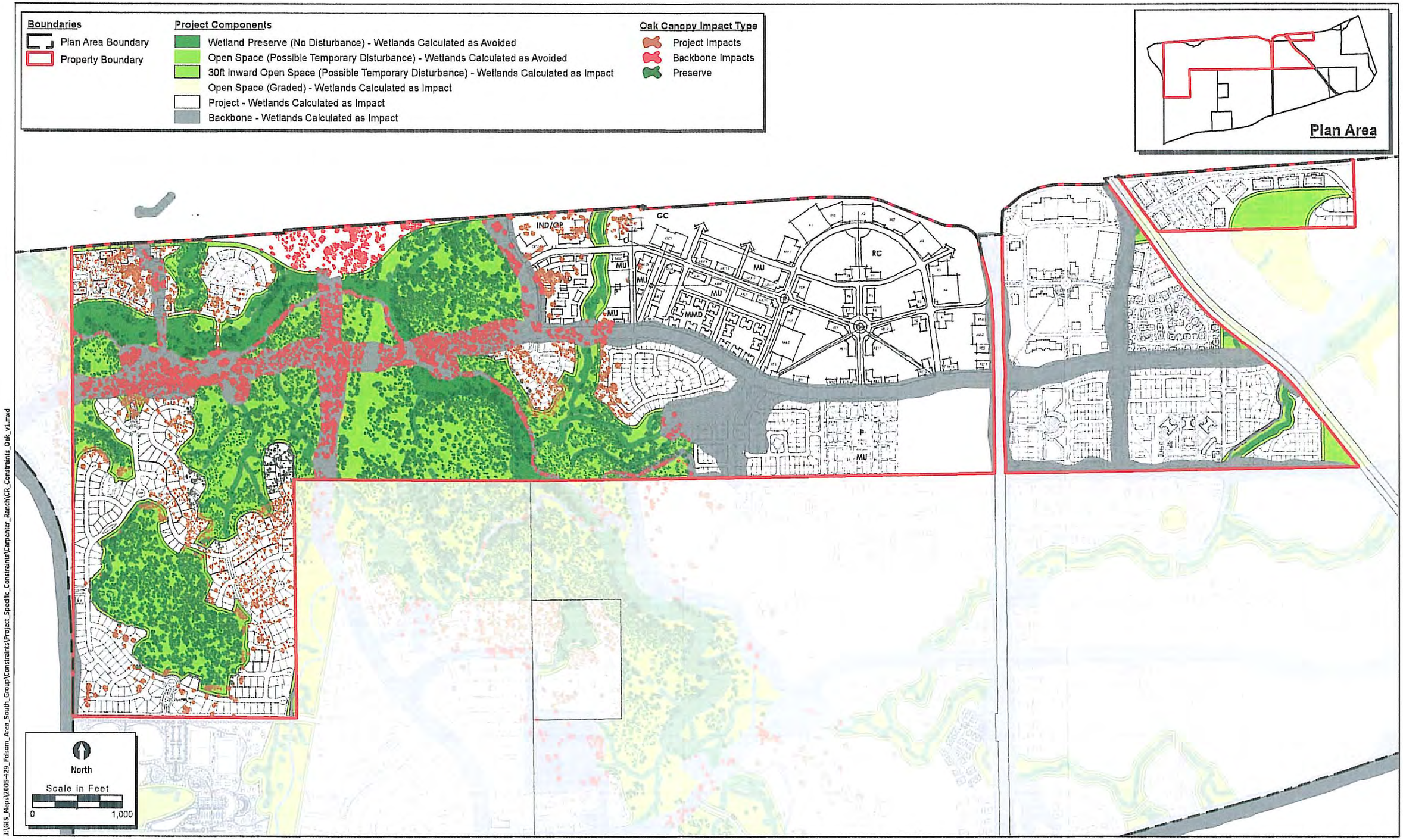

Map Date: 05/12/2010

Figure 11. Carpenter Ranch - Oak Canopy Constraints

2009-174 Carpenter Ranch

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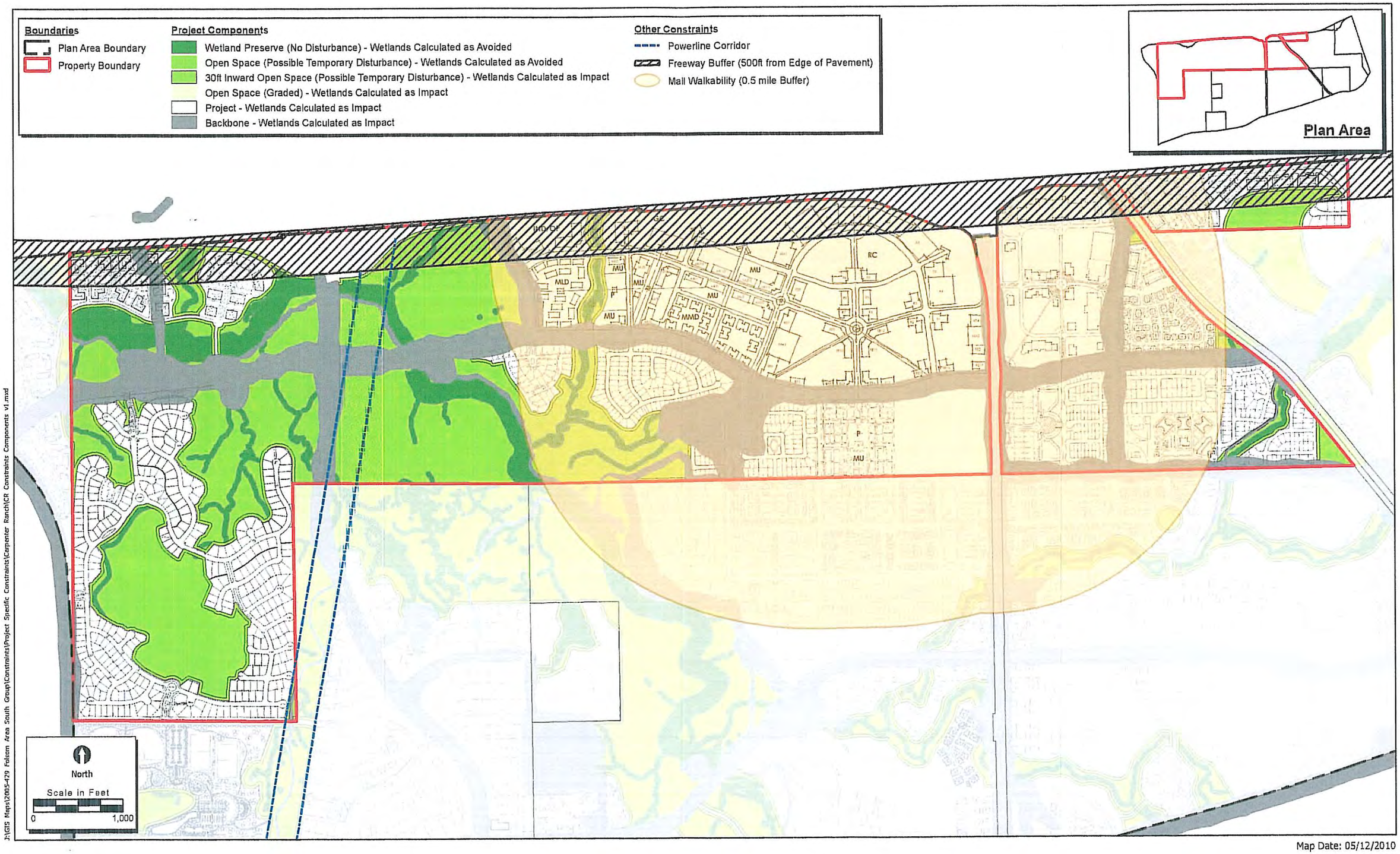

Map Date: 05/12/2010

Figure 12. Carpenter Ranch - Project Component Constraints

2009-174 Carpenter Ranch

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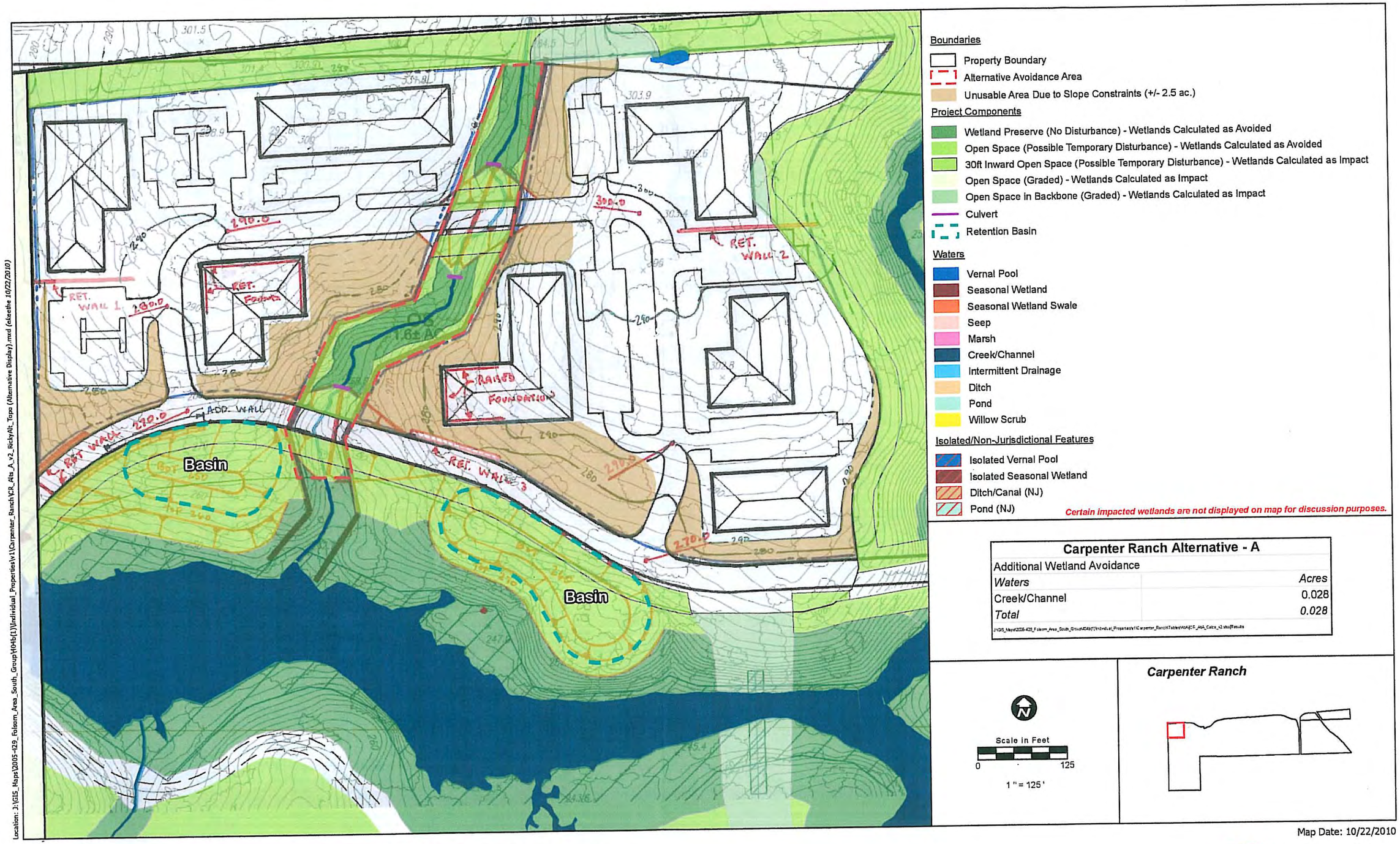
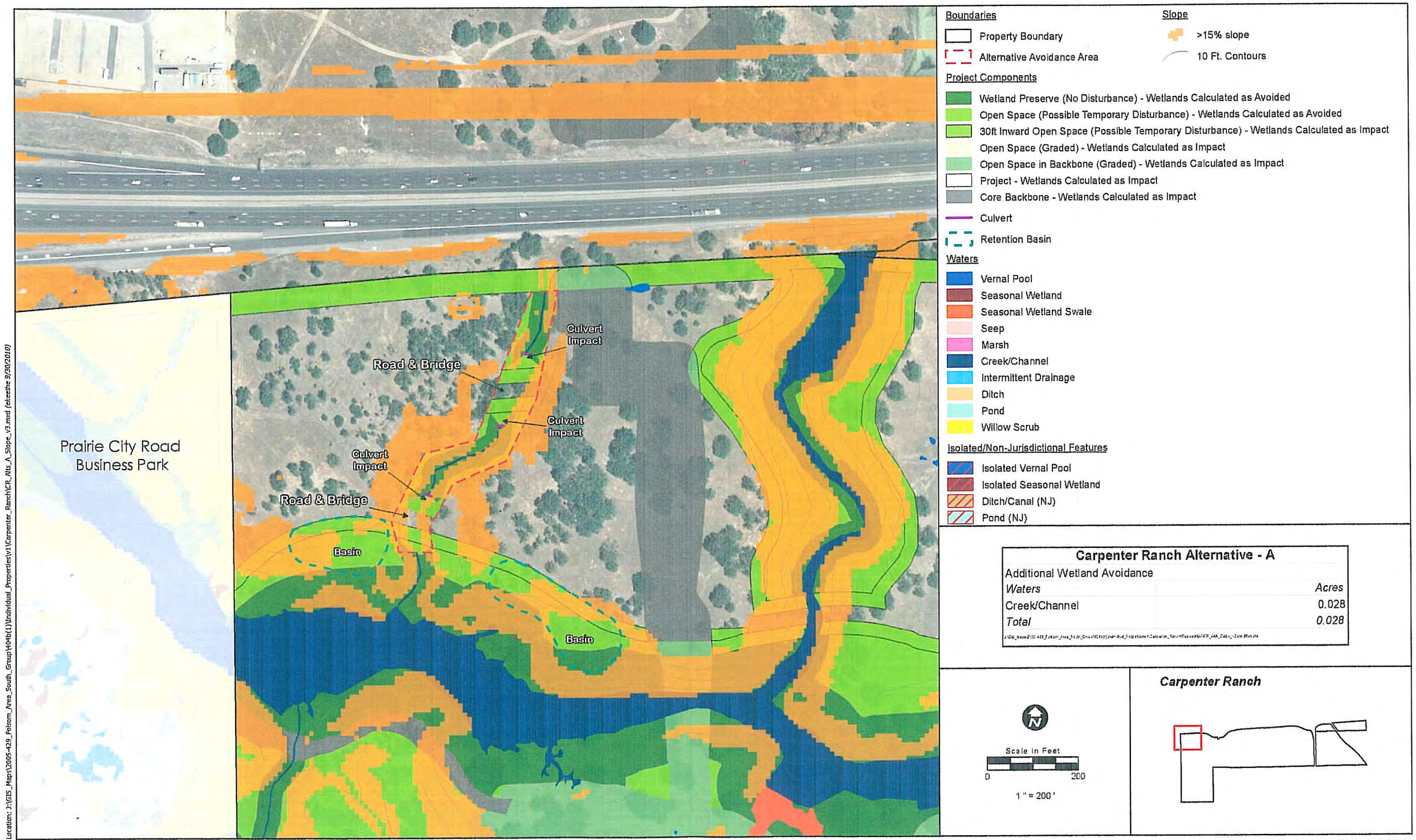


Figure 13. Carpenter Ranch Alternative A Lotting, with 25-foot Buffers and Culverts

2009-174 Carpenter Ranch



Map Date: 9/30/2010

Figure 14. Carpenter Ranch Alternative A, with 25-foot Buffers, Culverts and Slope Analysis

2009-174 Carpenter Ranch

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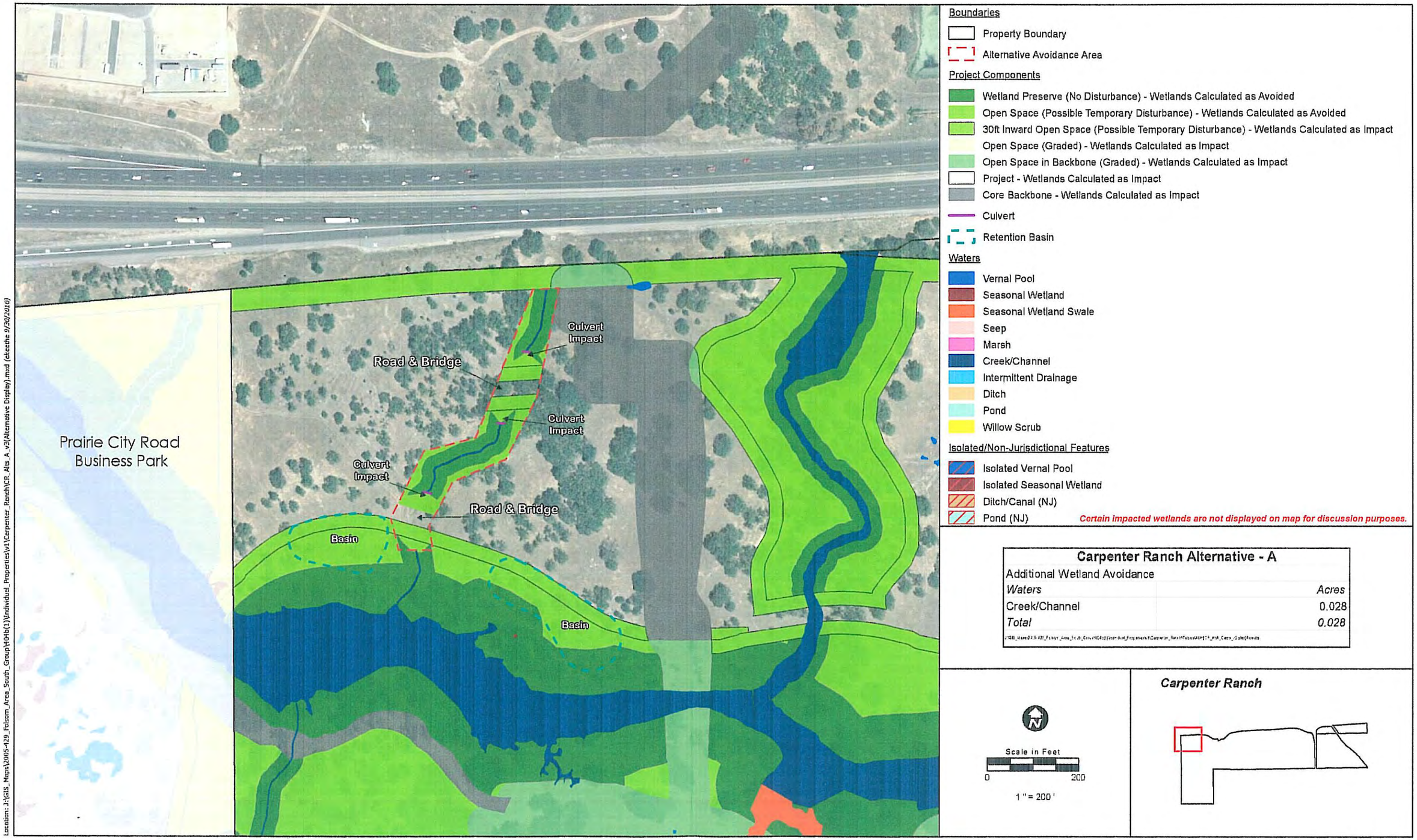

Map Date: 9/30/2010

Figure 15. Carpenter Ranch Alternative A, with 25-foot Buffers and Culverts

2009-174 Carpenter Ranch

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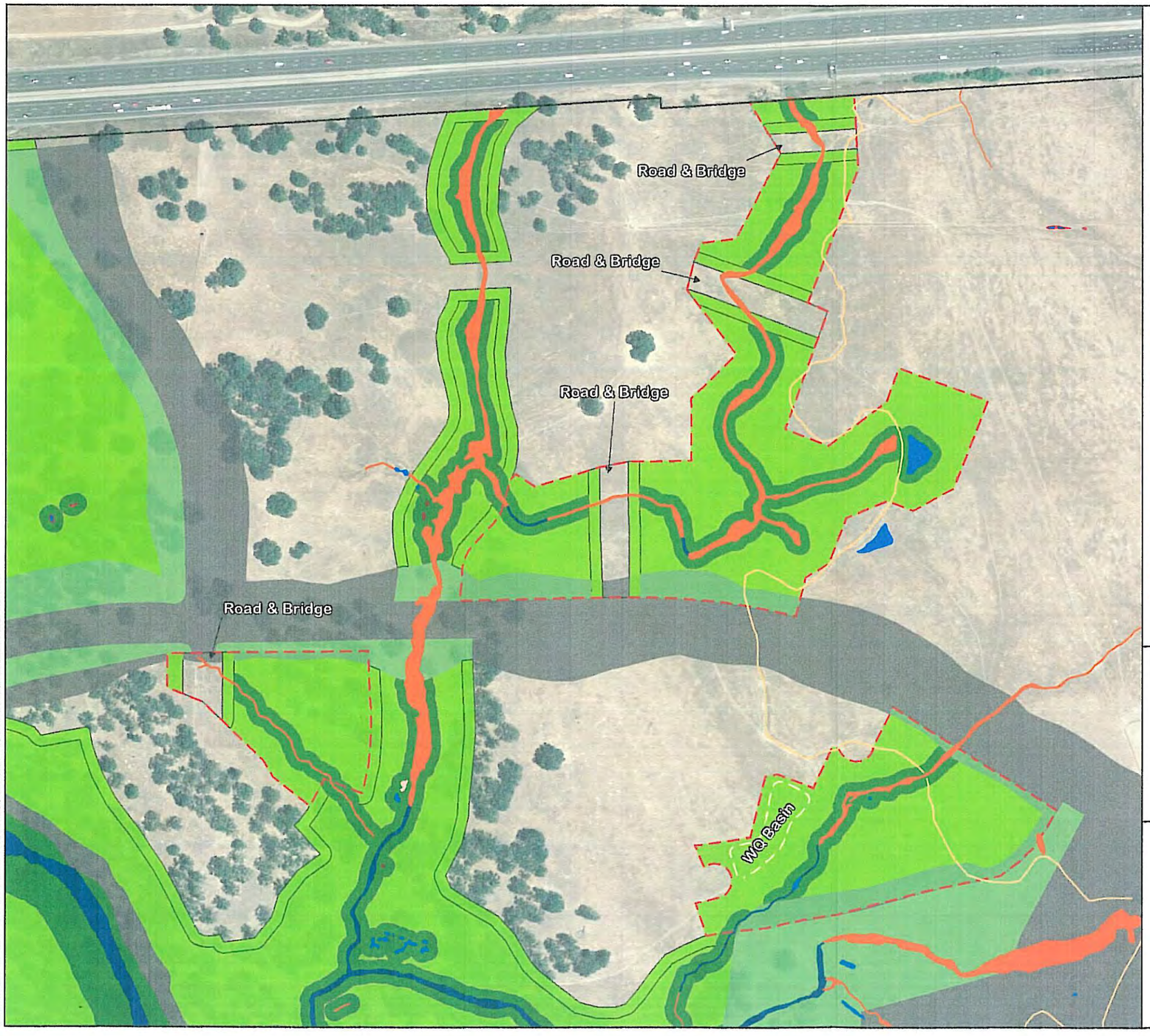
Figure 16. Alternative A1 Watershed

Looking north from Highway 50.

Inlet on the north side of Highway 50.

Outfall on the south side of Highway 50.

Figure 17. Alternate A Watershed and Culvert Photos



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- Alternative Avoidance Area

Project Components

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- Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Impact
- Open Space (Graded) - Wetlands Calculated as Impact
- Open Space in Backbone (Graded) - Wetlands Calculated as Impact
- Project - Wetlands Calculated as Impact
- Core Backbone - Wetlands Calculated as Impact

Waters

- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Marsh
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond
- Willow Scrub

Isolated/Non-Jurisdictional Features

- Isolated Vernal Pool
- Isolated Seasonal Wetland
- Ditch/Canal (NJ)
- Pond (NJ)

Carpenter Ranch Alternative - B

Additional Wetland Avoidance

Waters	*Acres*
Vernal Pool	0.101
Seasonal Wetland Swale	0.868
Creek/Channel	0.041
Total	*1.010*

Alternatives Land Use and Wetland Summary

	Wetland Preserve Acreage(+/-)	Developable Land Lost Due to Additional Avoidance Acreage[1] (+/-)	Preserved Waters of U.S.	Impacted Waters of U.S.	Additional Avoidance of Waters
Alternative B	66.39	23.70	14.825	12.841	1.010
Proposed Project	61.10	N/A	13.815	13.851	N/A

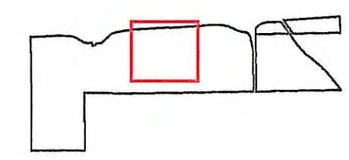
[1] *Provided by MSCE*

North

Scale in Feet

0 300

Carpenter Ranch



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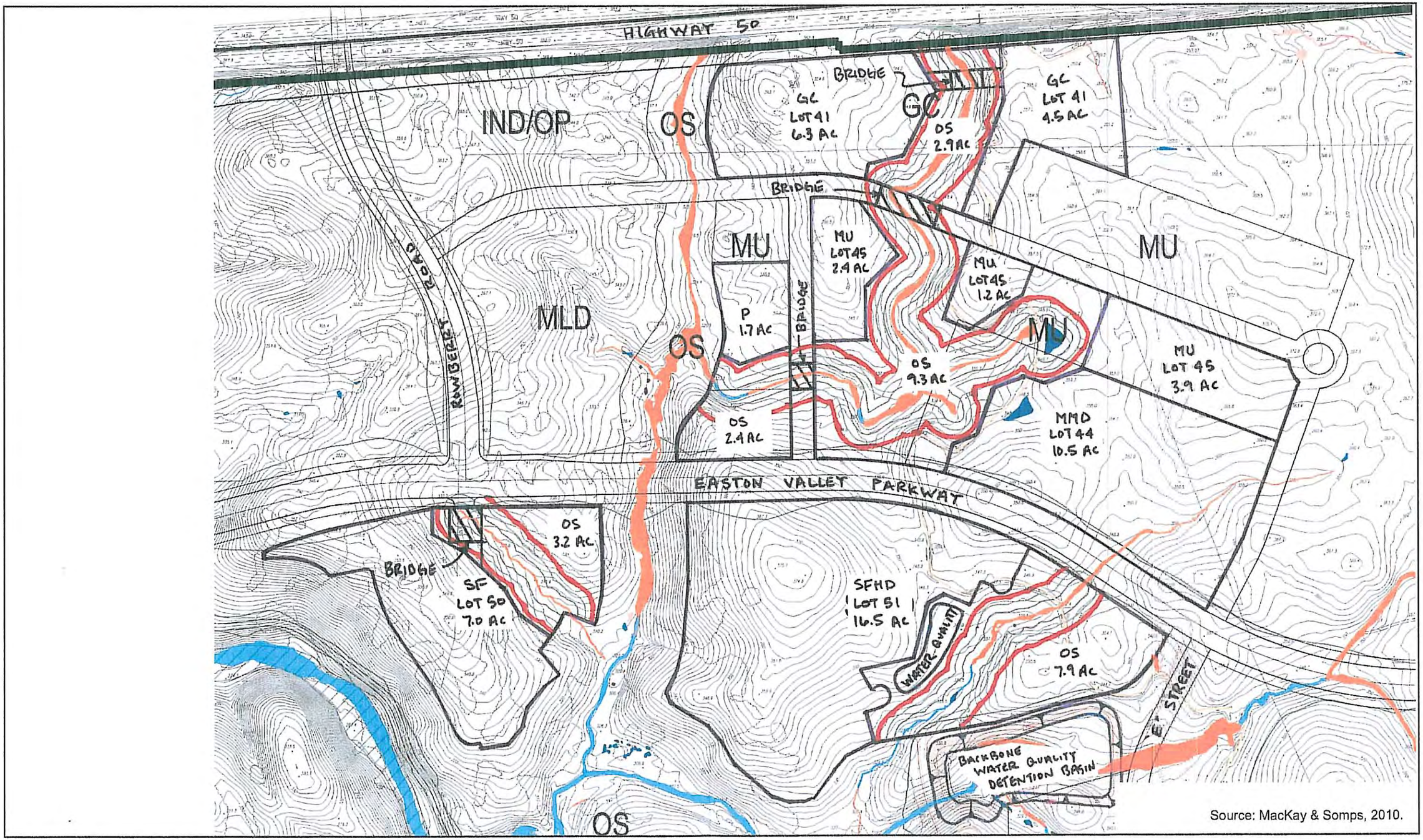
Map Date: 03/19/2010

Figure 18. Carpenter Ranch Alternative B

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Source: MacKay & Somps, 2010.

Figure 19. Carpenter Ranch Alternative B - Conceptual Land Use Plan

Boundaries

- Property Boundary
- Alternative Avoidance Area

Project Components

- Wetland Preserve (No Disturbance) - Wetlands Calculated as Avoided
- Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Impact
- Open Space (Graded) - Wetlands Calculated as Impact
- Open Space in Backbone (Graded) - Wetlands Calculated as Impact
- Project - Wetlands Calculated as Impact
- Core Backbone - Wetlands Calculated as Impact

Waters

- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Marsh
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond
- Willow Scrub

Isolated/Non-Jurisdictional Features

- Isolated Vernal Pool
- Isolated Seasonal Wetland
- Ditch/Canal (NJ)
- Pond (NJ)

Carpenter Ranch Alternative - B1

Additional Wetland Avoidance	
Waters	*Acres*
Seasonal Wetland Swale	0.043
Total	*0.043*

Alternatives Land Use and Wetland Summary

	Wetland Preserve Acreage(+/-)	Developable Land Lost Due to Additional Avoidance Acreage[1] (+/-)	Preserved Waters of U.S.	Impacted Waters of U.S.	Additional Avoidance of Waters
Alternative B1	61.67	3.20	13.858	13.808	0.043
Proposed Project	61.10	N/A	13.815	13.851	N/A

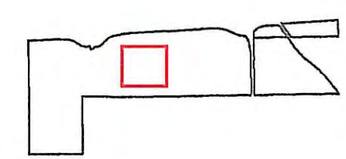
[1] *Provided by MSCE*

North

Scale in Feet

0 200

Carpenter Ranch

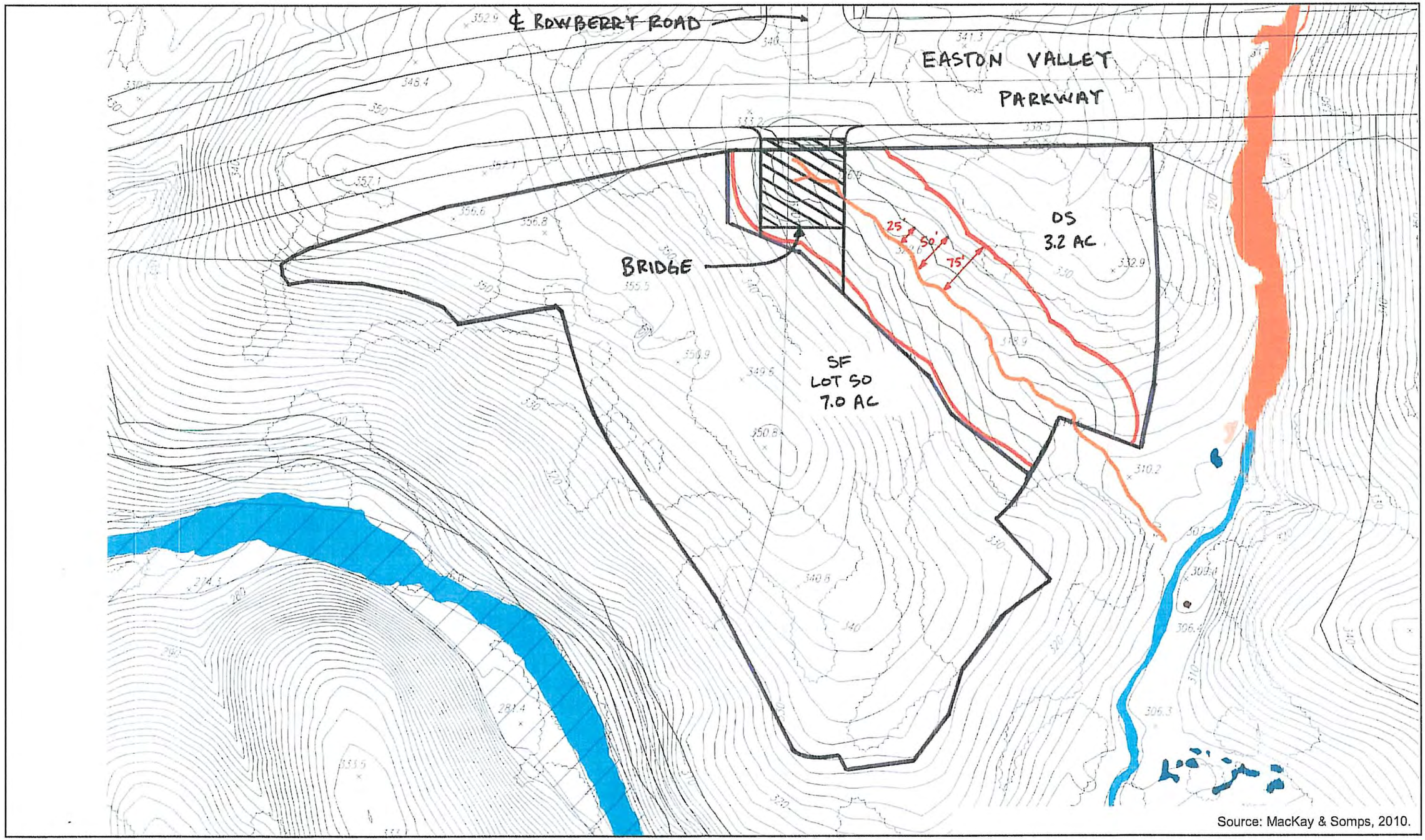


Map Date: 03/19/2010

Figure 20. Carpenter Ranch Alternative B1

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Source: MacKay & Somps, 2010.

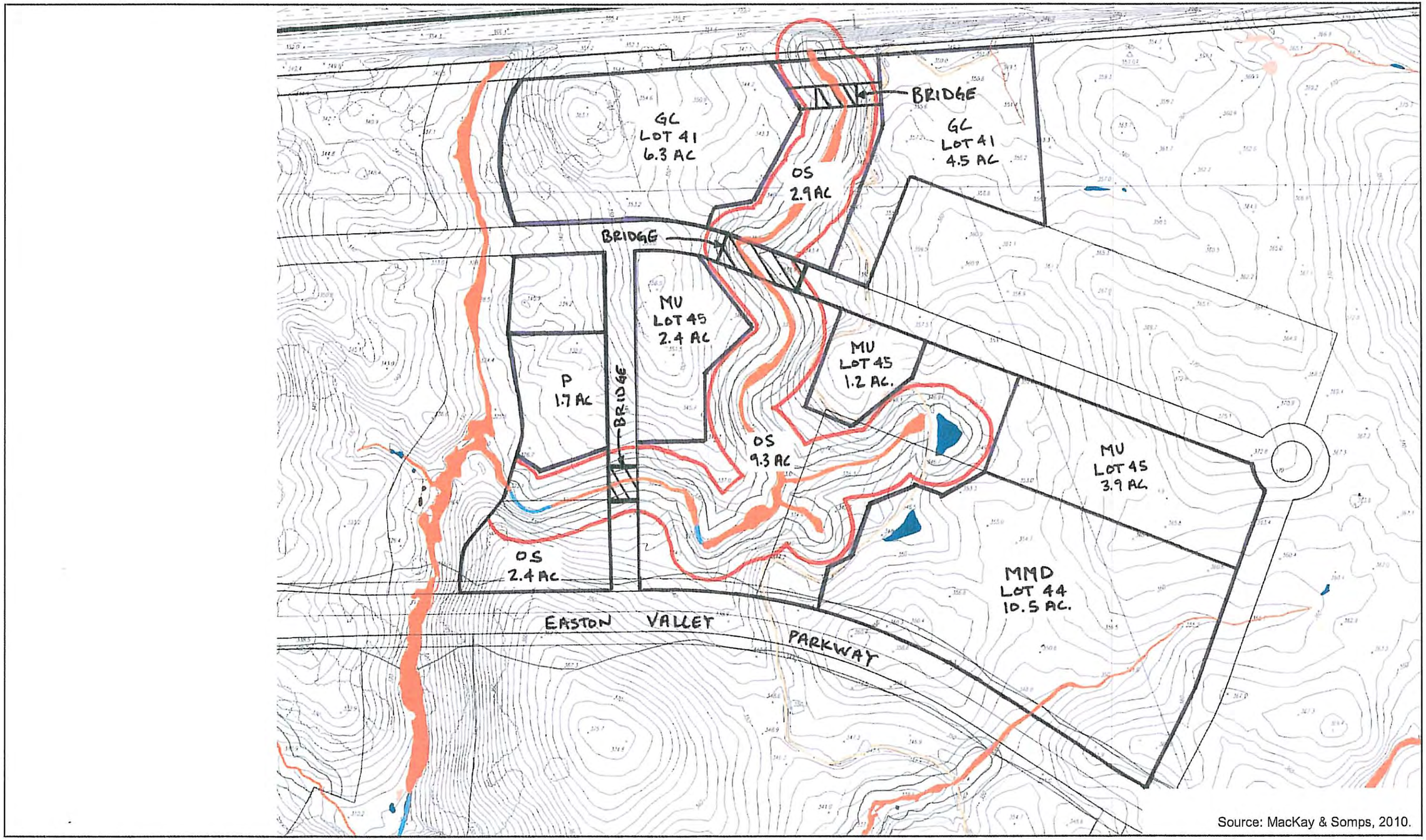
Figure 21. Carpenter Ranch Alternative B1 - Conceptual Land Use Plan Detail

Map Date: 03/19/2010

Figure 22. Carpenter Ranch Alternative B2

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Source: MacKay & Somps, 2010.

Figure 23. Carpenter Ranch Alternative B2 - Conceptual Land Use Plan Detail

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Boundaries

- Property Boundary
- Alternative Avoidance Area

Project Components

- Wetland Preserve (No Disturbance) - Wetlands Calculated as Avoided
- Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Impact
- Open Space (Graded) - Wetlands Calculated as Impact
- Open Space in Backbone (Graded) - Wetlands Calculated as Impact
- Project - Wetlands Calculated as Impact
- Core Backbone - Wetlands Calculated as Impact

Waters

- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Marsh
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond
- Willow Scrub

Isolated/Non-Jurisdictional Features

- Isolated Vernal Pool
- Isolated Seasonal Wetland
- Ditch/Canal (NJ)
- Pond (NJ)

Carpenter Ranch Alternative - B3

Additional Wetland Avoidance

Waters	*Acres*
Vernal Pool	0.010
Seasonal Wetland Swale	0.108
Creek/Channel	0.017
Total	*0.135*

Alternatives Land Use and Wetland Summary

	Wetland Preserve Acreage(+/-)	Developable Land Lost Due to Additional Avoidance Acreage[1](+/-)	Preserved Waters of U.S.	Impacted Waters of U.S.	Additional Avoidance of Waters
Alternative B3	62.11	7.90	13.950	13.716	0.135
Proposed Project	61.10	N/A	13.815	13.851	N/A

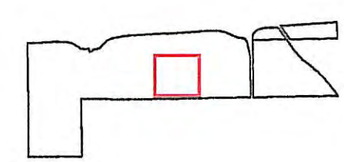
[1] *Provided by MSCE*

North

Scale in Feet

0 200

Carpenter Ranch



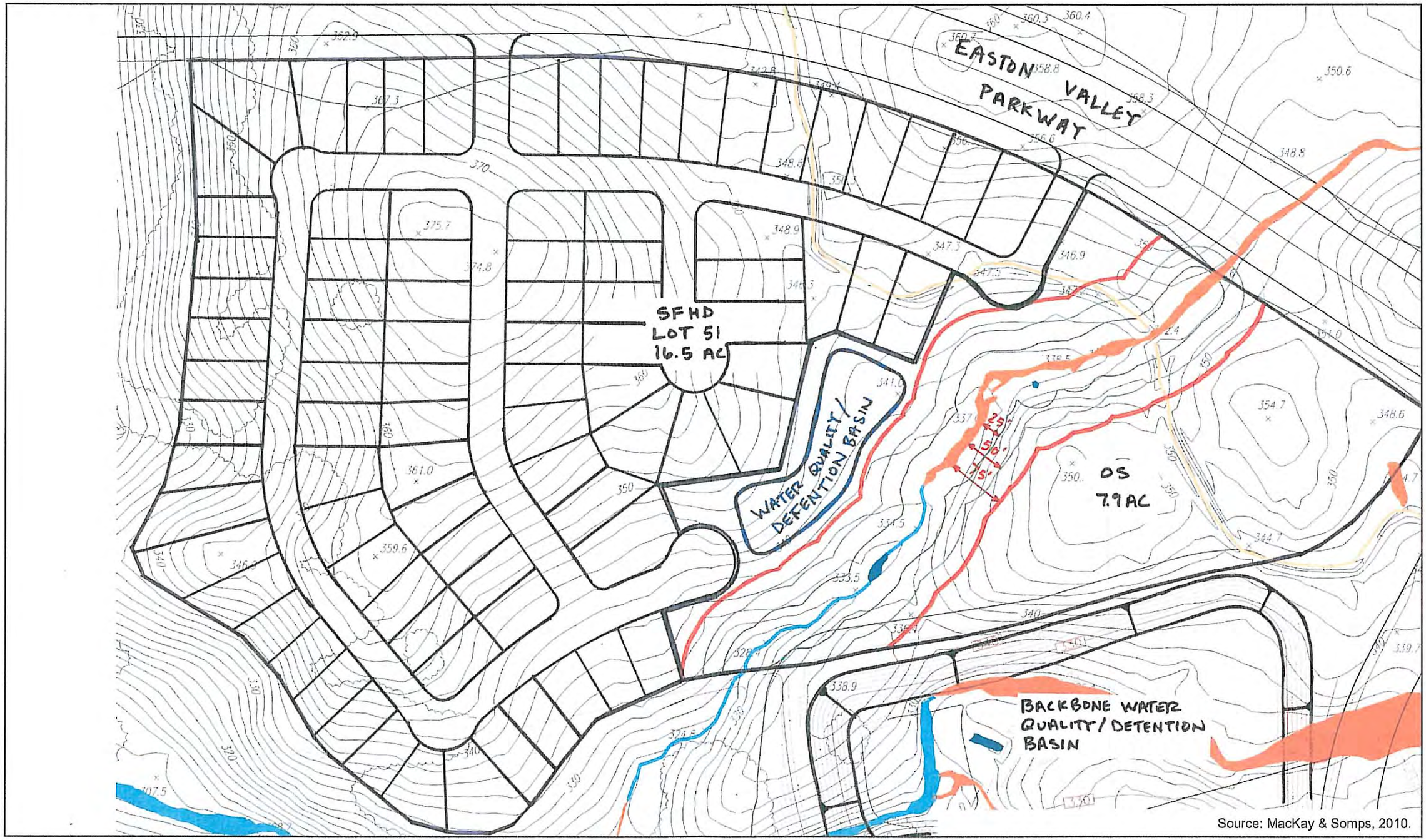
J:\GIS_Maps\2005-429_Folsom_Area_South_Group\404b(1)\Individual_Properties\v1\Carpenter_Ranch\CR_Alts_B3_LUBack.mxd

Map Date: 03/19/2010

Figure 24. Carpenter Ranch Alternative B3

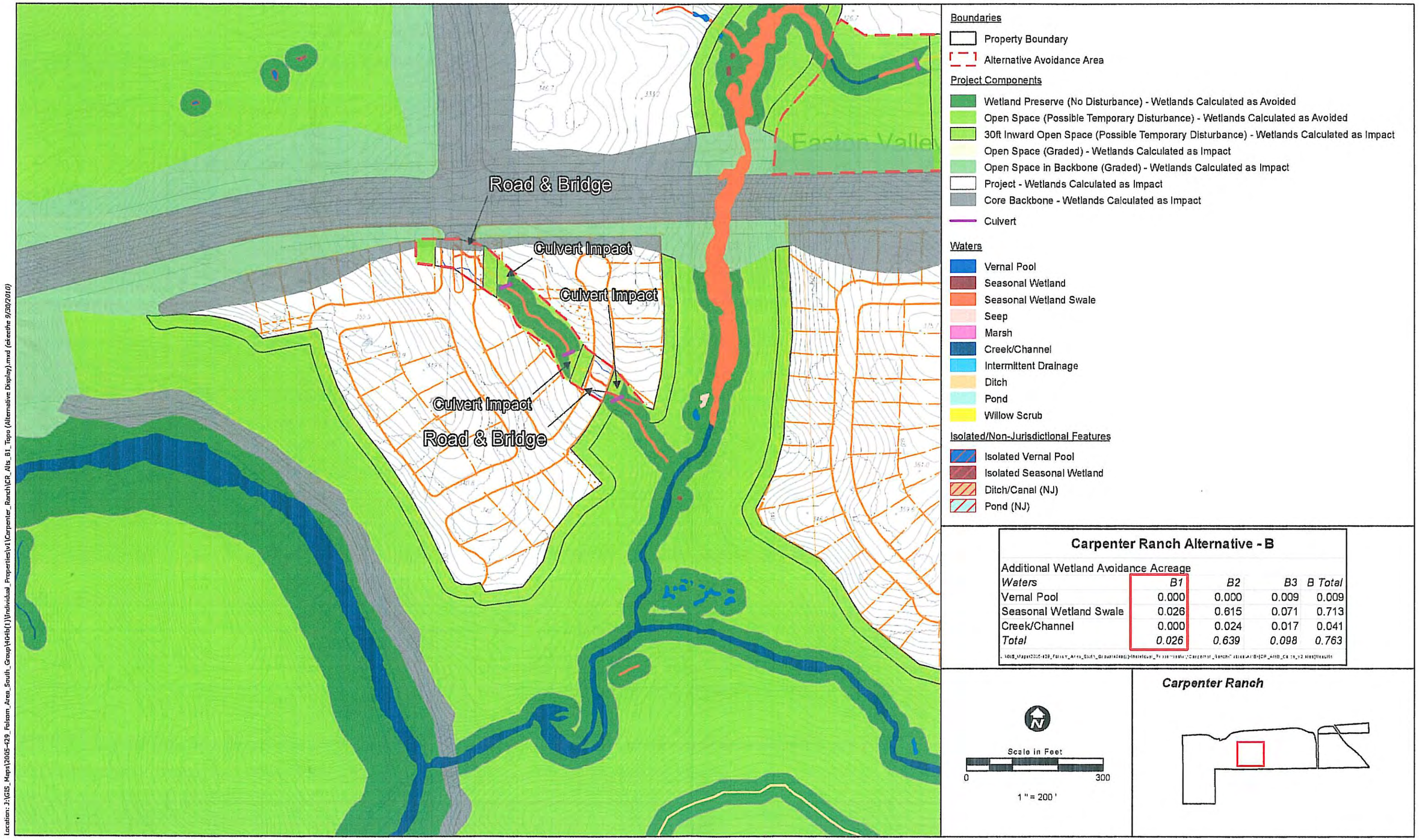
2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Source: MacKay & Somps, 2010.

Figure 25. Carpenter Ranch Alternative B3 - Conceptual Land Use Plan Detail



Carpenter Ranch Alternative - B

Additional Wetland Avoidance Acreage

Waters	*B1*	*B2*	*B3*	*B Total*
Vernal Pool	0.000	0.000	0.009	0.009
Seasonal Wetland Swale	0.026	0.615	0.071	0.713
Creek/Channel	0.000	0.024	0.017	0.041
Total	*0.026*	*0.639*	*0.098*	*0.763*

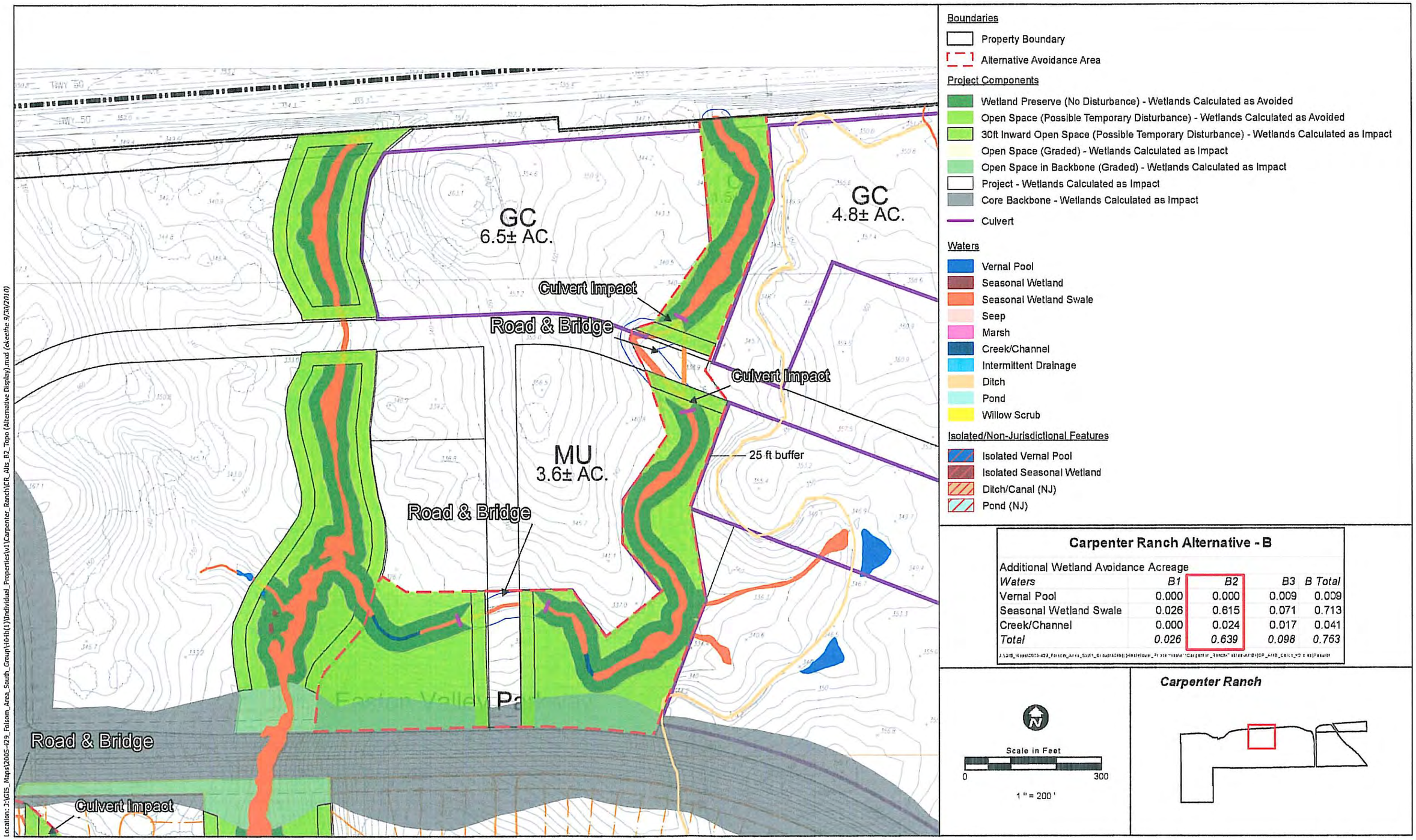
Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Grib(1)\Individual_Properties\v1\Carpenter_Ranch\CR_Alts_B1_Topo (Alternative Display).mxd (ekeethe 9/30/2010)

Map Date: 9/30/2010

Figure 26. Carpenter Ranch Alternative B1 Lotting, with 25-foot Buffers and Culverts

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Carpenter Ranch Alternative - B

Additional Wetland Avoidance Acreage

Waters	*B1*	*B2*	*B3*	*B Total*
Vernal Pool	0.000	0.000	0.009	0.009
Seasonal Wetland Swale	0.026	0.615	0.071	0.713
Creek/Channel	0.000	0.024	0.017	0.041
Total	*0.026*	*0.639*	*0.098*	*0.763*

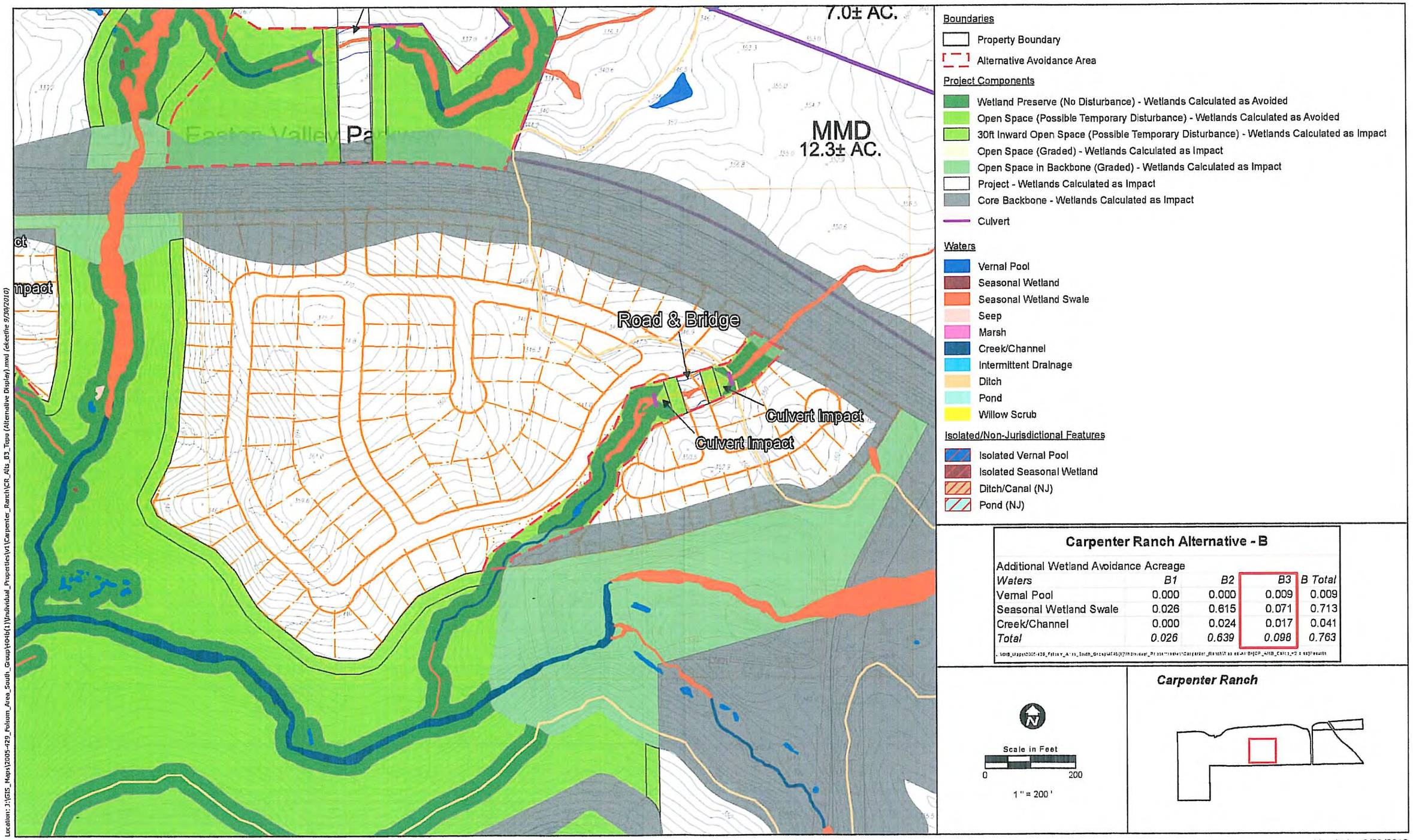
Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Individual_Properties\v1\Carpenter_Ranch\CR_Alts_B2_Topo (Alternative Display).mxd (ekeethe 9/30/2010)

Map Date: 9/30/2010

Figure 27. Carpenter Ranch Alternative B2 Lotting, with 25-foot Buffers and Culverts

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Carpenter Ranch Alternative - B

Additional Wetland Avoidance Acreage

Waters	*B1*	*B2*	*B3*	*B Total*
Vernal Pool	0.000	0.000	0.009	0.009
Seasonal Wetland Swale	0.026	0.615	0.071	0.713
Creek/Channel	0.000	0.024	0.017	0.041
Total	*0.026*	*0.639*	*0.098*	*0.763*

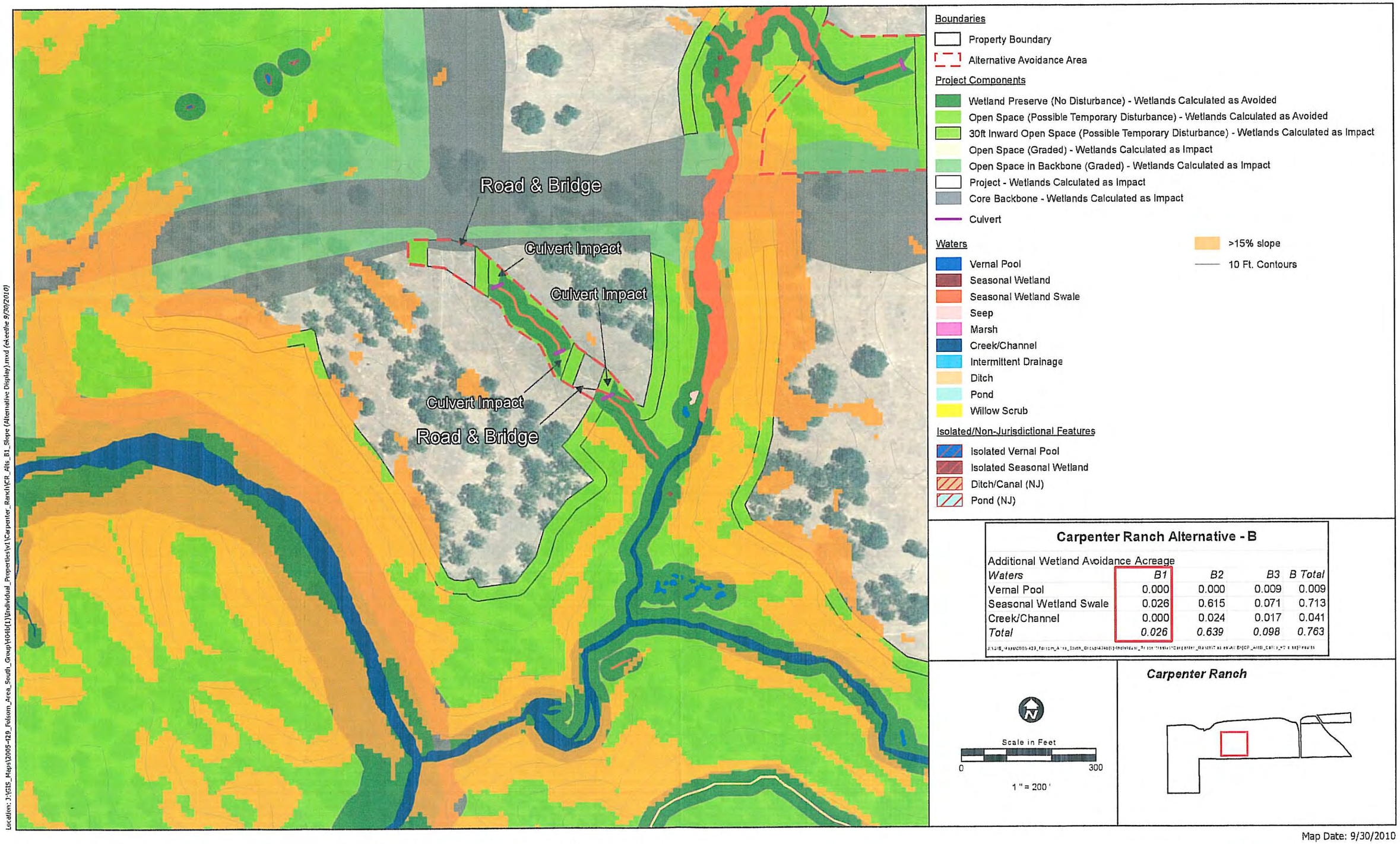
Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Orb(1)\Individual_Properties\v1\Carpenter_Ranch\CR_Alts_B3_Topo (Alternative Display).mxd (ckeeffe 9/30/2010)

Map Date: 9/30/2010

Figure 28. Carpenter Ranch Alternative B3 Lotting, with 25-foot Buffers and Culverts

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\404b(1)\Individual_Properties\v1\Carpenter_Ranch\CR_Alts_B1_Slope (Alternative Display).mxd (ekeethe 9/30/2010)

Map Date: 9/30/2010

Figure 29. Carpenter Ranch Alternative B1, with 25-foot Buffers, Culverts and Slope Analysis

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Boundaries

- Property Boundary
- Alternative Avoidance Area

Project Components

- Wetland Preserve (No Disturbance) - Wetlands Calculated as Avoided
- Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Impact
- Open Space (Graded) - Wetlands Calculated as Impact
- Open Space in Backbone (Graded) - Wetlands Calculated as Impact
- Project - Wetlands Calculated as Impact
- Core Backbone - Wetlands Calculated as Impact
- Culvert

Waters

- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Marsh
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond
- Willow Scrub

Isolated/Non-Jurisdictional Features

- Isolated Vernal Pool
- Isolated Seasonal Wetland
- Ditch/Canal (NJ)
- Pond (NJ)

Carpenter Ranch Alternative - B

Additional Wetland Avoidance Acreage

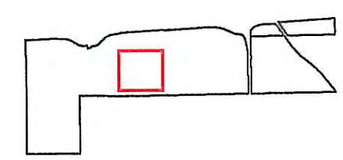
Waters	*B1*	*B2*	*B3*	*B Total*
Vernal Pool	0.000	0.000	0.009	0.009
Seasonal Wetland Swale	0.026	0.615	0.071	0.713
Creek/Channel	0.000	0.024	0.017	0.041
Total	*0.026*	*0.639*	*0.098*	*0.763*

Scale in Feet

0 300

1 " = 200 '

Carpenter Ranch



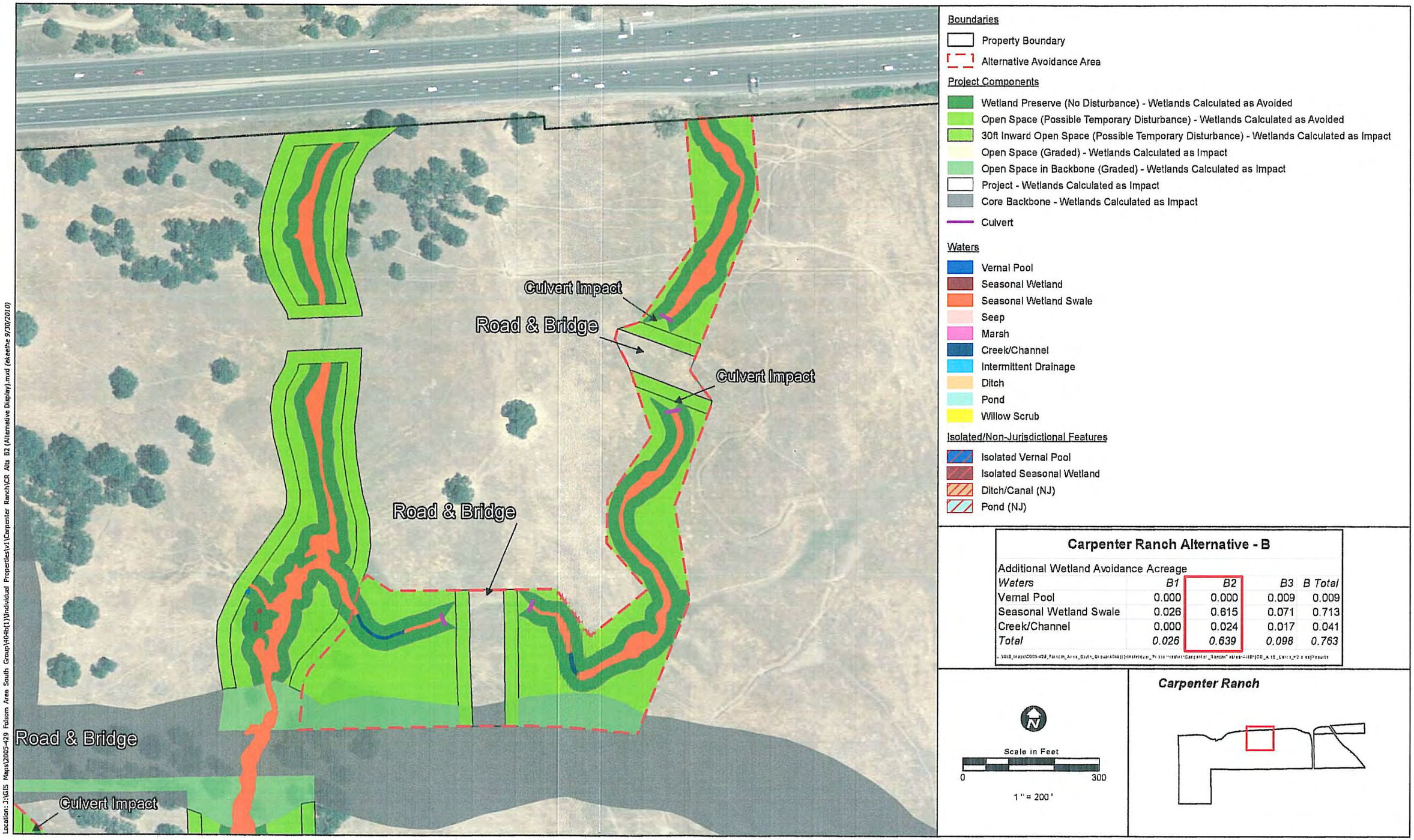
Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\Hub(1)\Individual_Properties\v1\Carpenter_Ranch\CR_Alts_B1 (Alternative Display).mxd (ekeethe 9/30/2010)

Map Date: 9/30/2010

Figure 30. Carpenter Ranch Alternative B1, with 25-foot Buffers and Culverts

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Carpenter Ranch Alternative - B

Additional Wetland Avoidance Acreage

Waters	*B1*	*B2*	*B3*	*B Total*
Vernal Pool	0.000	0.000	0.009	0.009
Seasonal Wetland Swale	0.026	0.615	0.071	0.713
Creek/Channel	0.000	0.024	0.017	0.041
Total	*0.026*	*0.639*	*0.098*	*0.763*

Map Date: 9/30/2010

Figure 31. Carpenter Ranch Alternative B2, with 25-foot Buffers and Culverts

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Ditch on North side of Highway 50 that constitutes headwaters of Subject Swale.

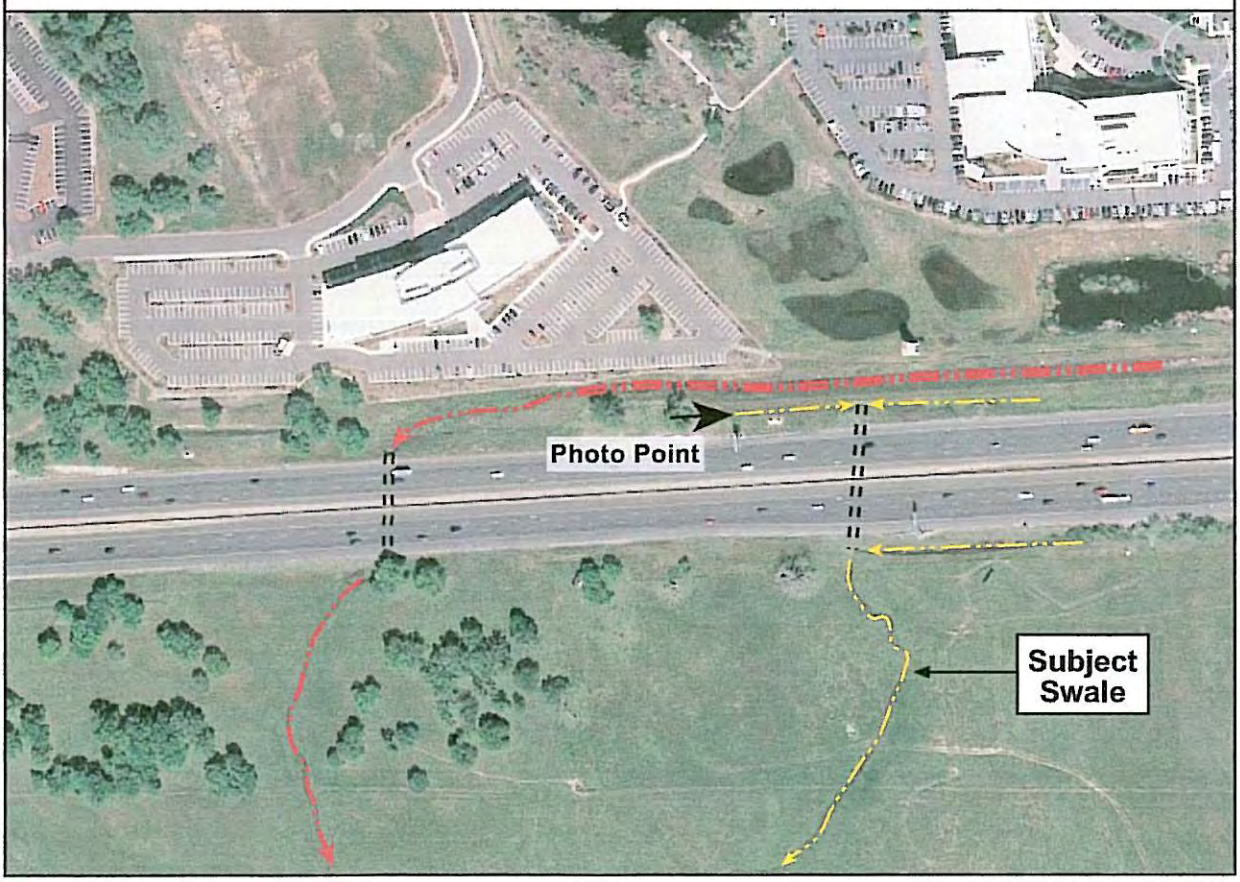
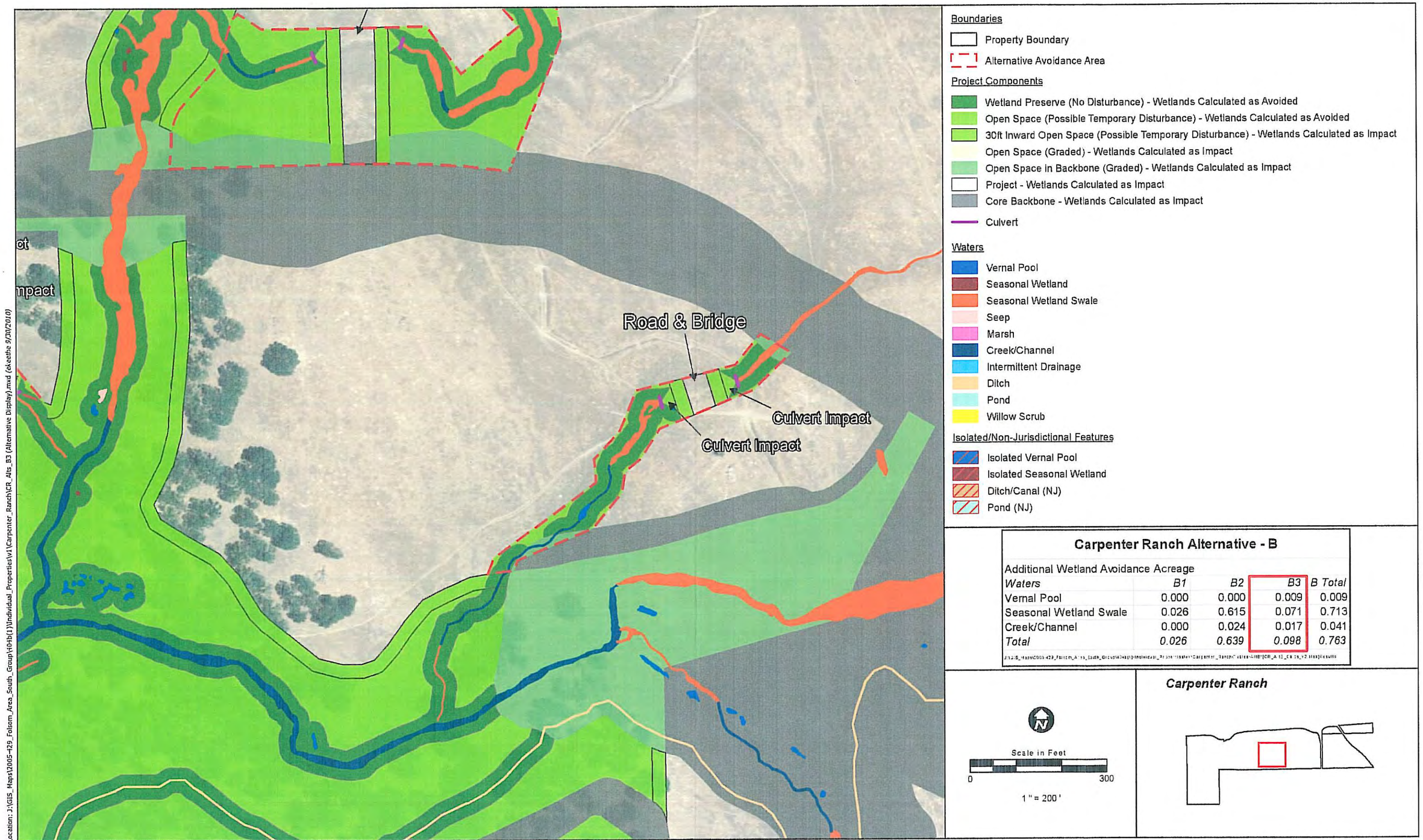


Figure 32. Alternative B2 with 25-foot Buffers - Subject Swale Watershed



Carpenter Ranch Alternative - B

Additional Wetland Avoidance Acreage

Waters	*B1*	*B2*	*B3*	*B Total*
Vernal Pool	0.000	0.000	0.009	0.009
Seasonal Wetland Swale	0.026	0.615	0.071	0.713
Creek/Channel	0.000	0.024	0.017	0.041
Total	*0.026*	*0.639*	*0.098*	*0.763*

Location: J:\GIS_Maps\2005-429_Folsom_Area_South_Group\40-b(1)\Individual_Properties\v1\Carpenter_Ranch\CR_Alts_B3 (Alternative Display).mxd (ckeethe 9/30/2010)

Map Date: 9/30/2010

Figure 33. Carpenter Ranch Alternative B3, with 25-foot Buffers and Culverts

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Boundaries

- Property Boundary
- Alternative Avoidance Area

Project Components

- Wetland Preserve (No Disturbance) - Wetlands Calculated as Avoided
- Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Avoided
- 30ft Inward Open Space (Possible Temporary Disturbance) - Wetlands Calculated as Impact
- Open Space (Graded) - Wetlands Calculated as Impact
- Open Space in Backbone (Graded) - Wetlands Calculated as Impact
- Project - Wetlands Calculated as Impact
- Realigned Backbone - Wetlands Calculated as Impact [2]

Waters

- Vernal Pool
- Seasonal Wetland
- Seasonal Wetland Swale
- Seep
- Marsh
- Creek/Channel
- Intermittent Drainage
- Ditch
- Pond
- Willow Scrub

Isolated/Non-Jurisdictional Features

- Isolated Vernal Pool
- Isolated Seasonal Wetland
- Ditch/Canal (NJ)
- Pond (NJ)

Carpenter Ranch Alternative - C [2]

Additional Wetland Avoidance	
Waters	*Acres*
Seasonal Wetland	0.001
Seasonal Wetland Swale	0.977
Creek/Channel	0.030
Total	*1.008*

[2] *Alternative based on realigned backbone that results in 0.023 ac. of additional wetland impact*

Alternatives Land Use and Wetland Summary

	Wetland Preserve Acreage(+/-)	Developable Land Lost Due to Additional Avoidance Acreage[1] (+/-)	Preserved Waters of U.S.	Impacted Waters of U.S.	Additional Avoidance of Waters
Alternative C[2]	63.72	2.20	14.823	12.843	1.008
Proposed Project	61.10	N/A	13.815	13.851	N/A

[1] *Provided by MSCE*

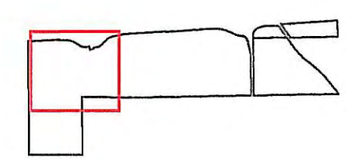
[2] *Alternative based on realigned backbone that results in 0.023 ac. of additional wetland impact*

North

Scale in Feet

0 400

Carpenter Ranch



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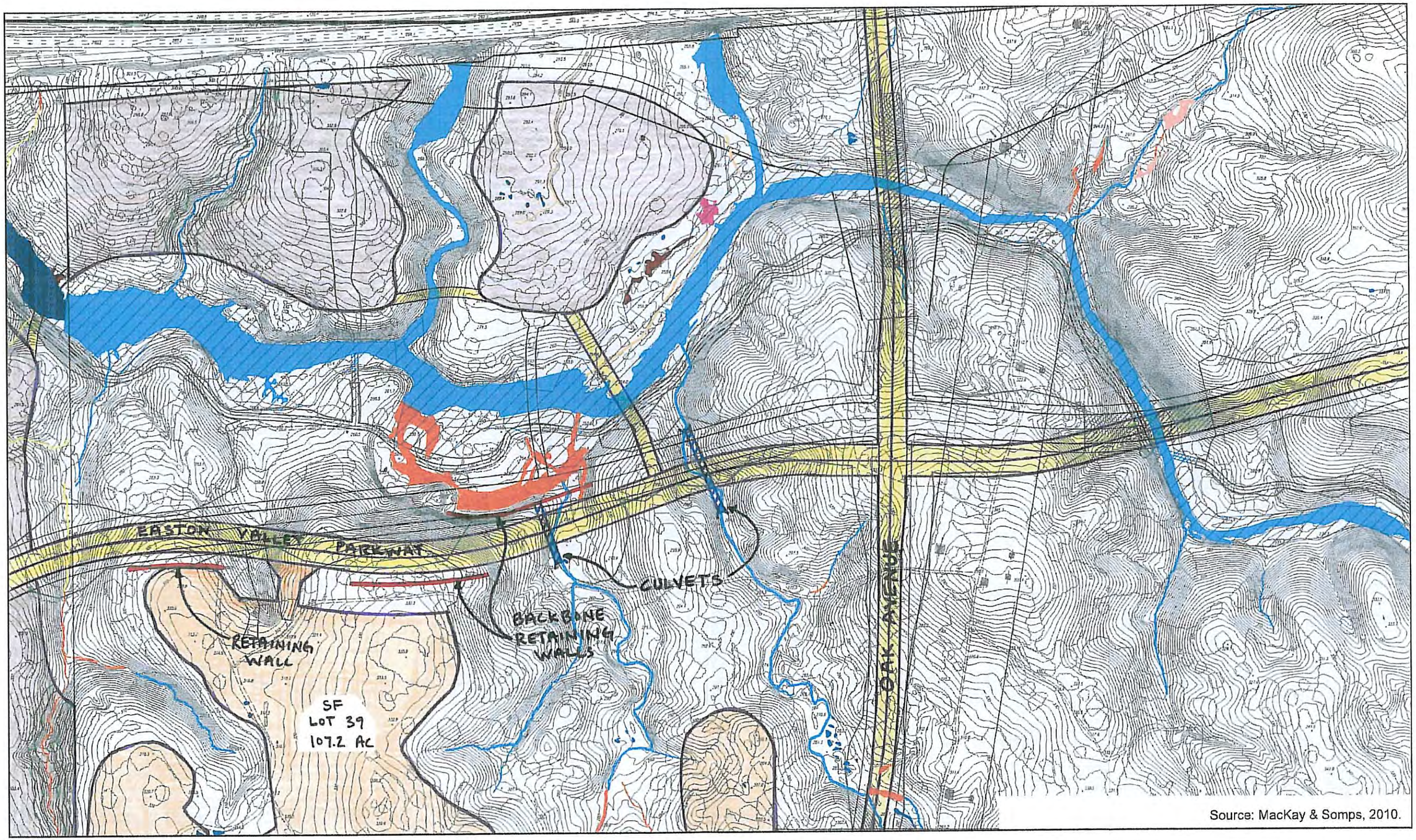
Map Date: 03/19/2010

Figure 34. Carpenter Ranch Alternative C

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS



Source: MacKay & Somps, 2010.

Figure 35. Carpenter Ranch Alternative C - Conceptual Land Use Plan Detail

2009-174 Carpenter Ranch

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

LIST OF ATTACHMENTS

Attachment A – Carpenter Ranch – Alternative A (MacKay & Somps Cost Impact Analysis)

Attachment B – Carpenter Ranch – Alternative A with 25-ft. Buffers and Culvrtd (MacKay & Somps Cost Impact Analysis)

Attachment C – Letters from Architects, Commercial Real Estate Brokers, and Developers

Attachment D – Carpenter Ranch – Alternative B (MacKay & Somps Cost Impact Analysis)

Attachment E – Carpenter Ranch – Alternative B1 with 25-ft. Buffers and Culvrtd (MacKay & Somps Cost Impact Analysis)

Attachment F – Carpenter Ranch – Alternative B2 with 25-ft. Buffers and Culvrtd (MacKay & Somps Cost Impact Analysis)

Attachment G – Carpenter Ranch – Alternative B3 with 25-ft. Buffers and Culvrtd (MacKay & Somps Cost Impact Analysis)

Attachment H – Carpenter Ranch – Alternative C (MacKay & Somps Cost Impact Analysis)

ATTACHMENT A

Carpenter Ranch – Alternative A (MacKay & Somps Cost Impact Analysis)

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative A

Office Park (Lot 37)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative A
Study Area Development Cost		
Industrial/Office Park Land Use Area	16.6	13.1
IND/OP Development Cost ($250,000 per acre)	$4,150,000	$3,275,000
Sub-Total Study Area Development Cost	$4,150,000	$3,275,000

Project Specific One-Time Cost Burdens		
IND/OP Backbone Infrastructure Cost ($295,250 per acre)	$4,901,150	$4,901,150
IND/OP Public Facilities and Services Cost ($122,650 per acre)'	$2,035,990	$1,606,715
Sub-Total Project Specific One-Time Burdens Cost	$6,937,140	$6,507,865

Total Study Area Development Cost	$11,087,140	$9,782,865
Total Study Area Development Cost per Acre	$667,900	$746,784
Increased Study Area Development Cost per Acre		$78,884

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$78,884
Revised Developable Land Use Area	13.1
Total Additional Development Cost Due to Wetland Avoidance	$1,033,000

Additional Construction Cost Due to Wetlands Preservation	Cost
Additional In-Tract Construction Cost	$2,697,000
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Const. Cost Due to Wetland Preservation	$2,697,000

	Cost
Total Additional Development Cost Due to Wetland Avoidance	$1,033,000
Total Additional Construction Cost Due to Wetland Avoidance	$2,697,000
Total Cost to Preserve Additional Wetlands	$3,730,000

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative A

Office Park (Lot 37)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Dwelling Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Industrial/Office Park Lot 37	16.6		13.1		216,928	171,190
Land Use Impacts Totals	16.6		13.1		216,928	171,190

Additional In-Tract Construction Cost	Units	Quantity	Unit Price	Amount
Lot 37				
Bridge, 50' wide x 110' long	DSF	5,500	$250	$1,375,000
Bore & Jack 24" casing (water)	LF	250	$500	$125,000
Sanitary Sewer Lift Station	mgd	0.2	$1,000,000	$200,000
4-inch Sewer Force Main	LF	450	$60	$27,000
Water Quality Basin	ac-ft	1	$25,000	$25,000
12-Inch Outfall Strucuture	EA	1	$7,250	$7,250
Bridge, 50' wide x 65' long	DSF	3,250	$250	$812,500
Bore & Jack 24" casing (water)	LF	250	$500	$125,000
Additional In-Tract Construction Cost Total				$2,697,000

ATTACHMENT B

Attachment B – Carpenter Ranch – Alternative A with 25-ft. Buffers and Culvrtd

(MacKay & Somps Cost Impact Analysis)

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative 'A' with 25-ft. Buffers and Culverts

Office Park (Lot 37)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative 'A' with 25-ft Buffer & Culverts
Study Area Development Cost		
Industrial/Office Park Land Use Area	16.6	13.6
IND/OP Development Cost ($250,000 per acre)	$4,150,000	$3,400,000
Sub-Total Study Area Development Cost	**$4,150,000**	**$3,400,000**

Project Specific One-Time Cost Burdens		
IND/OP Backbone Infrastructure Cost ($295,250 per acre)	$4,901,150	$4,901,150
IND/OP Public Facilities and Services Cost ($122,650 per acre)'	$2,035,990	$1,668,040
Sub-Total Project Specific One-Time Burdens Cost	**$6,937,140**	**$6,569,190**

Total Study Area Development Cost	**$11,087,140**	**$9,969,190**
Total Study Area Development Cost per Acre	$667,900	$733,029
Increased Study Area Development Cost per Acre		**$65,129**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$65,129
Revised Developable Land Use Area	13.6
Total Additional Development Cost Due to Wetland Avoidance	**$886,000**

Additional Construction Cost Due to Wetlands Preservation	**Cost**
Additional In-Tract Construction Cost	$1,007,000
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Const. Cost Due to Wetland Preservation	**$1,007,000**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	$886,000
Total Additional Construction Cost Due to Wetland Avoidance	$1,007,000
Total Cost to Preserve Additional Wetlands	**$1,893,000**

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative 'A' with 25-ft. Buffers and Culverts

Office Park (Lot 37)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Dwelling Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Industrial/Office Park Lot 37	16.6		13.6		216,929	177,725
Land Use Impacts Totals	**16.6**		**13.6**		**216,929**	**177,725**

Additional In-Tract Construction Cost	Units	Quantity	Unit Price	Amount
Retained Building Foundation	SF	1,500	$150	$225,000
Raised Building Foundation	SF	2,200	$150	$330,000
Additional Retaining Wall	SF	1,000	$70	$70,000
Retaining Wall 1	SF	1,600	$70	$112,000
Retaining Wall 2	SF	1,360	$70	$95,200
Retaining Wall 3	SF	900	$70	$63,000
Water Quality Basin	ac-ft	1	$25,000	$25,000
12-Inch Outfall Strucuture	EA	1	$7,250	$7,250
36-inch Culvert	LF	270	$130	$35,100
36-inch Culvert Outfall Struct.	EA	2	$12,000	$24,000
36-inch Culvert Inlet Struct.	EA	2	$10,000	$20,000
Additional In-Tract Construction Cost Total				**$1,007,000**

ATTACHMENT C

Attachment C – Letters from Architects, Commercial Real Estate Brokers, and Developers

HOPKINS
REAL ESTATE GROUP
IRVINE · SANTA MONICA · SAN MATEO

July 1, 2010

Tim Kihm
FPA Land Development
4665 MacArthur Court, Suite 200
Newport Beach CA 92660

Dear Tim:

It was good talking with you recently and getting an update on Carpenter Ranch. We continue to be interested in working with you to develop some of you commercial property. As you know, Hopkins Real Estate Group has an excellent reputation for developing regional and entertainment oriented commercial centers. After reviewing your site again and specifically evaluating the potential additional wetlands impacts, I have some relatively significant concerns. In fact, some of the impacts are very similar to the potential wetlands impacts we discussed last year for the mall site.

The site has excellent proximity to Hwy 50 and the regional and civic uses that surround it. The proximity and synergy with these neighboring uses are very important to the success of and entertainment/mixed-use development. We reviewed the studies prepared by the engineering and environmental firms and have the following concerns:

- While open space can certainly be an amenity to many types of development, the size and location of this feature would cause significantly more damage than good.
- The open space in this location would break up the development and connectivity of compatible uses as well as the walkability of the overall area.
- This change would create a material increase to the development cost, thus greatly reducing the value of the land.
- The lost acreage results in a development area that is not large enough for us to develop a successful entertainment center.
- The loss of land would likely require us to build a parking structure which would also be cost prohibitive and make the project economically infeasible.

If you are able to continue with a plan that is similar to the original, we would be interested in discussing opportunities to develop your commercial center on Carpenter Ranch.

Very Truly Yours,

Laurence Weese
Director of Acquisitions

17461 Derian Avenue, Suite 106
Irvine, California 92614
949 270 2400 • Fax 949 644-8631

233 Wilshire Boulevard, Suite 515
Santa Monica, California 90401
310 393-2500 • Fax 310 393 2551

1840 Gateway Drive, Suite 200
San Mateo, California 94404
650 378-1353 • Fax 650 378 1354

www.hopkinsgroup.com

JEFFREY DeMURE + ASSOCIATES
ARCHITECTS · PLANNERS

June 2, 2010

Folsom SOI Landowners
c/o Tim Kihm
President
FPA Land Development, LLC
4665 Macarthur Court, Suite 200
Newport Beach, CA 92660

Dear Mr. Kihm,

We have reviewed the information you provided to us regarding the preservation of a 14 acre linear wetlands corridor that would in essence, divide and disjoint the mixed-use Entertainment District site as currently proposed in the Carpenter Ranch project. With every planning and design commission, we look to achieve for our clients (and each project's stakeholders), the best balance of intelligent, deliberate, and economically feasible design that treads as lightly as practical "on the land" within the context of socially responsible, desirable, and marketable land uses. Within this framework, as the lead Planning and Architectural firm involved in many planning projects, (consisting of thousands of acres of varied land uses throughout the west), we have some thoughts and opinions we would like to submit for your consideration about the practicality and sustainability for the mixed-use Entertainment District.

The Entertainment District is envisioned to be a walkable, connected district with a vibrant main street ambiance and a strong pedestrian connection to the adjacent Regional Mall. Additionally, the Entertainment District is planned to provide a vibrant synergy of a variety of large and small uses, such as residential, retail, restaurants, and a theater, to provide an exciting 24/7 destination. The considered linear open space segregates the mixed-use district into several separate parcels, eliminating the cohesive district concept and rendering some of the parcels infeasible for most users, and therefore unusable. Additional critical challenges are created, such as access and adequate parking, potentially crippling the entire concept and rendering this essential District infeasible.

From a conscientious design standpoint, the proposed open space will increase the need for automobile use within the Entertainment District and Regional Mall area, which is contrary to Sacramento's Blueprint principals of compact development and adverse to Smart Growth Principles of walkability. From a development perspective, the additional open space increases the cost of development by adding infrastructure, such as bridges and potentially structured parking to meet parking requirements; a burden that could render a landmark project financially infeasible.

In my professional opinion, an appropriately engineered and constructed sub-surface water channel is more desirable than a surface wetland for the sustainable, transit-friendly, and walkable environment being created for the community.

Best regards,

Jeffrey DeMure, AIA
President

1117 WINDFIELD WAY, SUITE 110, EL DORADO HILLS, CA 95762 · P: 916.941.3700 · F: 916.941.3777 · WWW.JDAARCH.COM

CITIVEST
Commercial and Residential Real Estate

June 28, 2010

Tim Kihm
President
FPA Land Development
4665 MacArthur Court, Suite 200
Newport Beach, CA 92660

Re: Carpenter Ranch
Folsom, California

Dear Mr. Kihm:

As you are aware, Citivest, Inc. is a commercial developer and management company based in Irvine, California. We have experience in the development and management of regional shopping malls. Per your request, we have reviewed the proposed Land Use Plan and the proposed wetland corridor overlay.

Our review indicates that proposed location of the wetland corridor will have a significant detrimental impact on the Entertainment District plan for the following reasons:

1. Good planning requires that the different districts within the development (residential, retail, restaurants and the theater) have continuity and synergy. The proposed wetland corridor will impede this and will also destroy the main street feel and walk-ability of the mixed use community.

2. The drainage preserve area would interfere with the circulation and parking requirements of the Entertainment District at this location.

3. The mitigation measures of bridges crossing the drainage preserve and parking structures to account for lost parking lot area would make the project economically infeasible.

Please feel free to contact me at (949) 474-0440 if any further analysis of this project is necessary.

Yours truly,

Dana Haynes
President

Citivest, Inc., 17461 Derian Ave., Ste. 108, Irvine, CA 92614 P: 949-474-0440 F 949-474-0330 www.citivestinc.com

Lewis Investment Company, LLC.

9216 Kiefer Boulevard / Sacramento, California 95826
Telephone: (916) 363-2617/Fax: (916) 364-9353

Douglas Mull – Vice President
Land Acquisition/Development
Direct (916) 363-2617 ext. 226
Direct Fax (916) 290-0845
E-mail: doug.mull@lewisop.com

June 29, 2010

Tim Kihm
FPA Land Development
4665 MacArthur Court, Suite 200
Newport Beach CA 92660

Re: Carpenter Ranch Mixed Use Retail Site

Dear Mr. Kihm:

For over 30 years our firm has developed (and continues to own and operate today) many retail and mixed use centers throughout the West. After studying the site plan, the location of the above site within the Specific Plan area is ideal for a mixed use retail center. Its adjacency to both the mall site and Highway 50 makes the site very favorable.

We have also reviewed the alternative site design prepared by ECORP Consulting, Inc. and MacKay & Somps Engineers which shows 14 acres of linear open space through the heart of the Entertainment District site. There are various problems with this alternative site design which incorporates this linear open space. From a development perspective, we feel this alternative design does the following:

- Damages the continuity and synergy critical among the entertainment district uses (residential, retail, restaurants and the theater)
- Reduces the number of useable acres to make the overall entertainment district infeasible
- Creates access issues and inadequate parking space
- Breaks up the district into 4 zones rather than one well planned cohesive district
- Adds 14 acres of Open Space right through the heart of the district completely changing its purpose and use
- Significantly increases the cost of development by adding infrastructure, such as bridges, and spreads the burden over fewer acres of development
- Completely destroys the main street feel and walkable mixed use community
- Separates the continuity of the entertainment district from the regional mall
- Chops up the mixed use parcels into unusable pieces as the remaining parcels are too small for larger users

Based on our experience of developing retail and mixed use centers, this alternative design is completely infeasible from both a land use design and financial perspective. If this 14 acre corridor were a requirement of the site, we would not be interested in pursuing it from a development standpoint.

Sincerely,
LEWIS OPERATING CORP.

Douglas V. Mull
Vice President
Land Acquisition/Development

ATTACHMENT D

Attachment D – Carpenter Ranch – Alternative B (MacKay & Somps Cost Impact Analysis)

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative B

Entertainment Zone

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative B
Study Area Development Cost		
Single Family - Land Use Area	10.2	7.0
No. of Single Family Units	36	21
Single Family High Density - Land Use Area	24.4	16.5
No. of Single Family High Density Units	134	90
Multi - Family Medium Density - Land Use Area	12.8	10.5
No. of Multi - Family High Density Units	234	192
Mixed Use Land Use Area	16.3	7.5
No. of Mixed Use Units	188	86
General Commercial Land Use Area	13.7	10.8
SF Development Cost ($200,000 per acre)	$2,040,000	$1,400,000
SFHD Development Cost ($275,000 per acre)	$6,710,000	$4,537,500
MMD Development Cost ($350,000 per acre)	$4,480,000	$3,675,000
MU Development Cost ($250,000 per acre)	$4,075,000	$1,875,000
GC Development Cost ($250,000 per acre)	$3,425,000	$2,700,000
Sub-Total Study Area Development Cost	**$20,730,000**	**$14,187,500**

Project Specific One-Time Cost Burdens		
SF Backbone Infrastructure Cost ($65,980 per unit)	$2,375,280	$2,375,280
SF Public Facilities and Services Cost ($21,920 per unit)[1]	$789,120	$460,320
SFHD Backbone Infrastructure Cost ($45,380 per unit)	$6,080,920	$6,080,920
SFHD Public Facilities and Services Cost ($21,920 per unit)[1]	$2,937,280	$1,972,800
MMD Backbone Infrastructure Cost ($28,580 per unit)	$6,687,720	$6,687,720
MMD Public Facilities and Services Cost ($14,520 per unit)[1]	$3,397,680	$2,787,840
MU Backbone Infrastructure Cost ($182,380 per acre)	$2,972,794	$2,972,794
MU Public Facilities and Services Cost ($81,720 per acre)[1]	$1,332,036	$612,900
GC Backbone Infrastructure Cost ($269,470 per acre)	$3,691,739	$3,691,739
GC Public Facilities and Services Cost ($74,330 per acre)[1]	$1,018,321	$802,764
Sub-Total Project Specific One-Time Burdens Cost	**$31,282,890**	**$28,445,077**

Total Study Area Development Cost	$52,012,890	$42,632,577
Total Study Area Development Cost per Acre	$672,001	$815,154
Increased Study Area Development Cost per Acre		$143,153

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative B

Entertainment Zone

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$143,153
Revised Developable Land Use Area	52.3
Total Additional Development Cost Due to Wetland Avoidance	**$7,487,000**
Additional Construction Cost Due to Wetland Avoidance	**Cost**
Additional In-Tract Construction Cost	$9,045,000
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$9,045,000**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	$7,487,000
Total Additional Construction Cost Due to Wetland Avoidance	$9,045,000
Total Cost to Preserve Additional Wetlands	**$16,532,000**

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Single Family						
Lot 50	10.2	36	7.0	21		
Single Family High Density						
Lot 51	24.4	134	16.5	90		
Multi-Family Medium Density						
Lot 44	12.8	234	10.5	192		
Mixed Use						
Lot 45	14.5	167	7.5	86	50,530	26,136
Lot 48	1.8	21	0.0	0	6,273	0
Mixed Use Totals	*16.3*	*188.0*	*7.5*	*86.0*	*56,803*	*26,136*
General Commercial						
Lot 41	13.7		10.8		149,193	117,612
Land Use Impacts Totals	**77.4**	**592.0**	**52.3**	**389.0**	**205,996**	**143,748**

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative B

Entertainment Zone

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Entertainment Zone Internal Road				
Bridge, 70' wide x 190' long	DSF	13,300	$250	3,325,000
Bore & Jack 24" casing (water)	LF	300	$500	150,000
Bore & Jack 24" casing (sewer)	LF	300	$500	150,000
Entertainment Zone Internal Road				
Bridge, 70' wide x 75' long	DSF	5,250	$250	1,312,500
Bore & Jack 24" casing (water)	LF	200	$500	100,000
Bore & Jack 24" casing (sewer)	LF	200	$500	100,000
Lot 41				
Bridge, 50' wide x 115' long	DSF	5,750	$250	1,437,500
Bore & Jack 24" casing (water)	LF	250	$500	125,000
Bore & Jack 24" casing (sewer)	LF	250	$500	125,000
Lot 50				
Bridge, 90' wide x 90' long	DSF	8,100	$250	2,025,000
Bore & Jack 24" casing (water)	LF	150	$500	75,000
Bore & Jack 24" casing (sewer)	LF	150	$500	75,000
Lot 51				
Water Quality Basin	ac-ft	1.5	$25,000	$37,500
12-Inch Outfall Strucuture	EA	1	$7,250	$7,250
Additional In-Tract Construction Cost Total				$9,045,000

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative B1

(Lot 50)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative B1
Study Area Development Cost		
Single Family - Land Use Area	10.2	7.0
No. of Single Family Units	36	21
SF Development Cost ($200,000 per acre)	$2,040,000	$1,400,000
Sub-Total Study Area Development Cost	**$2,040,000**	**$1,400,000**

Project Specific One-Time Cost Burdens		
SF Backbone Infrastructure Cost ($65,980 per unit)	$2,375,280	$2,375,280
SF Public Facilities and Services Cost ($21,920 per unit)[1]	$789,120	$460,320
Sub-Total Project Specific One-Time Burdens Cost	**$3,164,400**	**$2,835,600**

Total Study Area Development Cost	**$5,204,400**	**$4,235,600**
Total Study Area Development Cost per Acre	$510,235	$605,086
Increased Study Area Development Cost per Acre		**$94,850**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$94,850
Revised Developable Land Use Area	7.0
Total Additional Development Cost Due to Wetland Avoidance	**$664,000**
Additional Construction Cost Due to Wetland Avoidance	**Cost**
Additional In-Tract Construction Cost	$2,175,000
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$2,175,000**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	$664,000
Total Additional Construction Cost Due to Wetland Avoidance	$2,175,000
Total Cost to Preserve Additional Wetlands	**$2,839,000**

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative B1

(Lot 50)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Single Family						
Lot 50	10.2	36	7.0	21		
Land Use Impacts Totals	10.2	36	7.0	21	0	0

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Bridge, 90' wide x 90' long	DSF	8,100	$250	2,025,000
Bore & Jack 24" casing (water)	LF	150	$500	75,000
Bore & Jack 24" casing (sewer)	LF	150	$500	75,000
Additional In-Tract Construction Cost Total				$2,175,000

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative B2

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative B2
Study Area Development Cost		
Multi - Family Medium Density - Land Use Area	12.8	10.5
No. of Multi - Family High Density Units	234	192
Mixed Use Land Use Area	16.3	7.5
No. of Mixed Use Units	188	86
General Commercial Land Use Area	13.7	10.8
MMD Development Cost ($350,000 per acre)	$4,480,000	$3,675,000
MU Development Cost ($250,000 per acre)	$4,075,000	$1,875,000
GC Development Cost ($250,000 per acre)	$3,425,000	$2,700,000
Sub-Total Study Area Development Cost	**$11,980,000**	**$8,250,000**
Project Specific One-Time Cost Burdens		
MMD Backbone Infrastructure Cost ($28,580 per unit)	$6,687,720	$6,687,720
MMD Public Facilities and Services Cost ($14,520 per unit)[1]	$3,397,680	$2,787,840
MU Backbone Infrastructure Cost ($182,380 per acre)	$2,972,794	$2,972,794
MU Public Facilities and Services Cost ($81,720 per acre)[1]	$1,332,036	$612,900
GC Backbone Infrastructure Cost ($269,470 per acre)	$3,691,739	$3,691,739
GC Public Facilities and Services Cost ($74,330 per acre)[1]	$1,018,321	$802,764
Sub-Total Project Specific One-Time Burdens Cost	**$19,100,290**	**$17,555,757**
Total Study Area Development Cost	**$31,080,290**	**$25,805,757**
Total Study Area Development Cost per Acre	$726,175	$896,033
Increased Study Area Development Cost per Acre		**$169,858**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$169,858
Revised Developable Land Use Area	28.8
Total Additional Development Cost Due to Wetland Avoidance	**$4,892,000**

Additional Construction Cost Due to Wetland Avoidance	Cost
Additional In-Tract Construction Cost	$6,825,000
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$6,825,000**

Cost to Preserve Additional Wetlands	Cost
Total Additional Development Cost Due to Wetland Avoidance	$4,892,000
Total Additional Construction Cost Due to Wetland Avoidance	$6,825,000
Total Cost to Preserve Additional Wetlands	**$11,717,000**

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Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative B2

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Multi-Family Medium Density						
Lot 44	12.8	234	10.5	192		
Mixed Use						
Lot 45	14.5	167	7.5	86	50,530	26,136
Lot 48	1.8	21	0.0	0	6,273	0
Mixed Use Totals	*16.3*	*188.0*	*7.5*	*86.0*	*56,803*	*26,136*
General Commercial						
Lot 41	13.7		10.8		149,193	117,612
Land Use Impacts Totals	**42.8**	**422.0**	**28.8**	**278.0**	**205,996**	**143,748**

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Entertainment Zone Internal Road				
Bridge, 70' wide x 190' long	DSF	13,300	$250	3,325,000
Bore & Jack 24" casing (water)	LF	300	$500	150,000
Bore & Jack 24" casing (sewer)	LF	300	$500	150,000
Entertainment Zone Internal Road				
Bridge, 70' wide x 75' long	DSF	5,250	$250	1,312,500
Bore & Jack 24" casing (water)	LF	200	$500	100,000
Bore & Jack 24" casing (sewer)	LF	200	$500	100,000
Lot 41				
Bridge, 50' wide x 115' long	DSF	5,750	$250	1,437,500
Bore & Jack 24" casing (water)	LF	250	$500	125,000
Bore & Jack 24" casing (sewer)	LF	250	$500	125,000
Additional In-Tract Construction Cost Total				**6,825,000**

Folsom Plan Area Specific Plan

Carpenter Ranch - Location B3

(Lot 51)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative B3
Study Area Development Cost		
Single Family High Density - Land Use Area	24.4	16.5
No. of Single Family High Density Units	134	90
SFHD Development Cost ($275,000 per acre)	$6,710,000	$4,537,500
Sub-Total Study Area Development Cost	**$6,710,000**	**$4,537,500**

Project Specific One-Time Cost Burdens		
SFHD Backbone Infrastructure Cost ($45,380 per unit)	$6,080,920	$6,080,920
SFHD Public Facilities and Services Cost ($21,920 per unit)[1]	$2,937,280	$1,972,800
Sub-Total Project Specific One-Time Burdens Cost	**$9,018,200**	**$8,053,720**

Total Study Area Development Cost	**$15,728,200**	**$12,591,220**
Total Study Area Development Cost per Acre	$644,598	$763,104
Increased Study Area Development Cost per Acre		**$118,506**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$118,506
Revised Developable Land Use Area	16.5
Total Additional Development Cost Due to Wetland Avoidance	**$1,955,000**
Additional Construction Cost Due to Wetland Avoidance	**Cost**
Additional In-Tract Construction Cost	$45,000
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$45,000**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	$1,955,000
Total Additional Construction Cost Due to Wetland Avoidance	$45,000
Total Cost to Preserve Additional Wetlands	**$2,000,000**

Folsom Plan Area Specific Plan

Carpenter Ranch - Location B3

(Lot 51)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Single Family High Density						
Lot 51	24.4	134	16.5	90		
Land Use Impacts Totals	**24.4**	**134**	**16.5**	**90**	**0**	**0**

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Lot 51				
Water Quality Basin	ac-ft	1.5	$25,000	$37,500
12-Inch Outfall Strucuture	EA	1	$7,250	$7,250
Additional In-Tract Construction Cost Total				**$45,000**

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative 'B1' with 25-ft. Buffer and Culverts (Lot 50)

Proposed Project with Additional Avoidance Areas
Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative 'B1' with 25-ft. Buffer & Culverts
Study Area Development Cost		
Single Family - Land Use Area	10.2	9.2
No. of Single Family Units	36	32
SF Development Cost ($200,000 per acre)	$2,040,000	$1,840,000
Sub-Total Study Area Development Cost	**$2,040,000**	**$1,840,000**

Project Specific One-Time Cost Burdens		
SF Backbone Infrastructure Cost ($65,980 per unit)	$2,375,280	$2,375,280
SF Public Facilities and Services Cost ($21,920 per unit)[1]	$789,120	$701,440
Sub-Total Project Specific One-Time Burdens Cost	**$3,164,400**	**$3,076,720**

Total Study Area Development Cost	**$5,204,400**	**$4,916,720**
Total Study Area Development Cost per Acre	$510,235	$534,426
Increased Study Area Development Cost per Acre		**$24,191**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	**$24,191**
Revised Developable Land Use Area	9.2
Total Additional Development Cost Due to Wetland Avoidance	**$223,000**

Additional Construction Cost Due to Wetland Avoidance	**Cost**
Additional In-Tract Construction Cost	$532,350
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$532,350**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	**$223,000**
Total Additional Construction Cost Due to Wetland Avoidance	**$532,350**
Total Cost to Preserve Additional Wetlands	**$755,350**

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative 'B1' with 25-ft. Buffer and Culverts (Lot 50)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Single Family						
Lot 50	10.2	36	9.2	32		
Land Use Impacts Totals	**10.2**	**36**	**9.2**	**32**	**0**	**0**

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Retaining wall	SF	7,200	$70	$504,000
24-inch Culvert	LF	130	$95	$12,350
24-inch Culvert Inlet Structure	EA	1	$7,000	$7,000
24-inch CulvertOutfall Structure	EA	1	$9,000	$9,000
Additional In-Tract Construction Cost Total				**$532,350**

ATTACHMENT E

Carpenter Ranch – Alternative B1 with 25-ft. Buffers and Culvrtd (MacKay & Somps Cost Impact Analysis)

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative 'B1' with 25-ft. Buffer and Culverts (Lot 50)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative 'B1' with 25-ft. Buffer & Culverts
Study Area Development Cost		
Single Family - Land Use Area	10.2	9.2
No. of Single Family Units	36	32
SF Development Cost ($200,000 per acre)	$2,040,000	$1,840,000
Sub-Total Study Area Development Cost	**$2,040,000**	**$1,840,000**

Project Specific One-Time Cost Burdens		
SF Backbone Infrastructure Cost ($65,980 per unit)	$2,375,280	$2,375,280
SF Public Facilities and Services Cost ($21,920 per unit)[1]	$789,120	$701,440
Sub-Total Project Specific One-Time Burdens Cost	**$3,164,400**	**$3,076,720**

Total Study Area Development Cost	**$5,204,400**	**$4,916,720**
Total Study Area Development Cost per Acre	$510,235	$534,426
Increased Study Area Development Cost per Acre		**$24,191**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	**$24,191**
Revised Developable Land Use Area	9.2
Total Additional Development Cost Due to Wetland Avoidance	**$223,000**

Additional Construction Cost Due to Wetland Avoidance	**Cost**
Additional In-Tract Construction Cost	$532,350
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$532,350**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	**$223,000**
Total Additional Construction Cost Due to Wetland Avoidance	**$532,350**
Total Cost to Preserve Additional Wetlands	**$755,350**

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative 'B1' with 25-ft. Buffer and Culverts (Lot 50)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Single Family						
Lot 50	10.2	36	9.2	32		
Land Use Impacts Totals	**10.2**	**36**	**9.2**	**32**	**0**	**0**

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Retaining wall	SF	7,200	$70	$504,000
24-inch Culvert	LF	130	$95	$12,350
24-inch Culvert Inlet Structure	EA	1	$7,000	$7,000
24-inch CulvertOutfall Structure	EA	1	$9,000	$9,000
Additional In-Tract Construction Cost Total				**$532,350**

ATTACHMENT F

Carpenter Ranch – Alternative B2 with 25-ft. Buffers and Culvrtd (MacKay & Somps Cost Impact Analysis)

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative 'B2' with 25-ft. Buffer and Culverts

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative 'B2' with 25-ft. Buffer & Culverts
Study Area Development Cost		
Multi - Family Medium Density - Land Use Area	12.8	12.3
No. of Multi - Family High Density Units	234	225
Mixed Use Land Use Area	16.3	10.6
No. of Mixed Use Units	188	122
General Commercial Land Use Area	13.7	11.3
MMD Development Cost ($350,000 per acre)	$4,480,000	$4,305,000
MU Development Cost ($250,000 per acre)	$4,075,000	$2,650,000
GC Development Cost ($250,000 per acre)	$3,425,000	$2,825,000
Sub-Total Study Area Development Cost	**$11,980,000**	**$9,780,000**
Project Specific One-Time Cost Burdens		
MMD Backbone Infrastructure Cost ($28,580 per unit)	$6,687,720	$6,687,720
MMD Public Facilities and Services Cost ($14,520 per unit)[1]	$3,397,680	$3,267,000
MU Backbone Infrastructure Cost ($182,380 per acre)	$2,972,794	$2,972,794
MU Public Facilities and Services Cost ($81,720 per acre)[1]	$1,332,036	$866,232
GC Backbone Infrastructure Cost ($269,470 per acre)	$3,691,739	$3,691,739
GC Public Facilities and Services Cost ($74,330 per acre)[1]	$1,018,321	$839,929
Sub-Total Project Specific One-Time Burdens Cost	**$19,100,290**	**$18,325,414**
Total Study Area Development Cost	**$31,080,290**	**$28,105,414**
Total Study Area Development Cost per Acre	$726,175	$821,796
Increased Study Area Development Cost per Acre		**$95,621**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$95,621
Revised Developable Land Use Area	34.2
Total Additional Development Cost Due to Wetland Avoidance	**$3,270,000**

Additional Construction Cost Due to Wetland Avoidance	**Cost**
Additional In-Tract Construction Cost	$2,269,700
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$2,269,700**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	**$3,270,000**
Total Additional Construction Cost Due to Wetland Avoidance	**$2,269,700**
Total Cost to Preserve Additional Wetlands	**$5,539,700**

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative 'B2' with 25-ft. Buffer and Culverts

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Multi-Family Medium Density						
Lot 44	12.8	234	12.3	225		
Mixed Use						
Lot 45	14.5	167	10.6	122	50,530	36,940
Lot 48	1.8	21	0.0	0	6,273	0
Mixed Use Totals	*16.3*	*188.0*	*10.6*	*122.0*	*56,803*	*36,940*
General Commercial						
Lot 41	13.7		11.3		149,193	123,057
Land Use Impacts Totals	**42.8**	**422.0**	**34.2**	**347.0**	**205,996**	**159,997**

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Lot 41				
Retaining Wall	SF	10,000	$70	$700,000
30-inch Culvert	LF	180	$115	$20,700
30-inch Culvert Inlet Structure	EA	1	$8,000	$8,000
30-inch Culvert outlet Structure	EA	1	$10,000	$10,000
Lot 44				
Retaining Wall	SF	4,000	$70	$280,000
Lot 45				
Retaining Wall	SF	11,500	$70	$805,000
Lot 47				
Retaining Wall	SF	5,200	$70	$364,000
Internal Roadway				
30-inch Culvert	LF	400	$115	$46,000
30-inch Culvert Inlet Structure	EA	2	$8,000	$16,000
30-inch Culvert outlet Structure	EA	2	$10,000	$20,000
Additional In-Tract Construction Cost Total				**$2,269,700**

ATTACHMENT G

Carpenter Ranch – Alternative B3 with 25-ft. Buffers and Culvrtd (MacKay & Somps Cost Impact Analysis)

Folsom Plan Area Specific Plan

Carpenter Ranch - Location 'B3' with 25-ft. Buffer and Culverts (Lot 51)

Proposed Project with Additional Avoidance Areas
Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative 'B3' with 25-ft. Buffer & Culverts
Study Area Development Cost		
Single Family High Density - Land Use Area	24.4	22.9
No. of Single Family High Density Units	134	118
SFHD Development Cost ($275,000 per acre)	$6,710,000	$6,297,500
Sub-Total Study Area Development Cost	**$6,710,000**	**$6,297,500**

Project Specific One-Time Cost Burdens		
SFHD Backbone Infrastructure Cost ($45,380 per unit)	$6,080,920	$6,080,920
SFHD Public Facilities and Services Cost ($21,920 per unit)[1]	$2,937,280	$2,586,560
Sub-Total Project Specific One-Time Burdens Cost	**$9,018,200**	**$8,667,480**

Total Study Area Development Cost	**$15,728,200**	**$14,964,980**
Total Study Area Development Cost per Acre	$644,598	$653,493
Increased Study Area Development Cost per Acre		**$8,894**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$8,894
Revised Developable Land Use Area	22.9
Total Additional Development Cost Due to Wetland Avoidance	**$204,000**
Additional Construction Cost Due to Wetland Avoidance	**Cost**
Additional In-Tract Construction Cost	$383,000
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$383,000**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	**$204,000**
Total Additional Construction Cost Due to Wetland Avoidance	**$383,000**
Total Cost to Preserve Additional Wetlands	**$587,000**

Folsom Plan Area Specific Plan

Carpenter Ranch - Location 'B3' with 25-ft. Buffer and Culverts (Lot 51)

Proposed Project with Additional Avoidance Areas
Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Single Family High Density Lot 51	24.4	134	22.9	118		
Land Use Impacts Totals	**24.4**	**134**	**22.9**	**118**	**0**	**0**

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Retaining Wall	SF	5,100	$70	$357,000
24-Inch Culvert	LF	100	$95	$9,500
24-inch Culvert Inlet Structure	EA	1	$7,000	$7,000
24-inch Culvert Outfall Structure	EA	1	$9,000	$9,000
Additional In-Tract Construction Cost Total				**$383,000**

ATTACHMENT H

Carpenter Ranch – Alternative C (MacKay & Somps Cost Impact Analysis)

Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative C

(Lot 39)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Description	Proposed Project	Alternative C
Study Area Development Cost		
Single Family - Land Use Area	109.4	107.2
No. of Single Family Units	338	321
SF Development Cost ($200,000 per acre)	$21,880,000	$21,440,000
Sub-Total Study Area Development Cost	**$21,880,000**	**$21,440,000**

Project Specific One-Time Cost Burdens		
SF Backbone Infrastructure Cost ($65,980 per unit)	$22,301,240	$22,301,240
SF Public Facilities and Services Cost ($21,920 per unit)[1]	$7,408,960	$7,036,320
Sub-Total Project Specific One-Time Burdens Cost	**$29,710,200**	**$29,337,560**

Total Study Area Development Cost	**$51,590,200**	**$50,777,560**
Total Study Area Development Cost per Acre	$471,574	$473,671
Increased Study Area Development Cost per Acre		**$2,097**

Additional Development Cost Due to Wetland Avoidance	
Increased Development Cost per Acre	$2,097
Revised Developable Land Use Area	107.2
Total Additional Development Cost Due to Wetland Avoidance	**$225,000**
Additional Construction Cost Due to Wetland Avoidance	**Cost**
Additional In-Tract Construction Cost	$329,000
Additional Backbone Infrastructure Construction Cost	$0
Total Additional Construction Cost Due to Wetland Avoidance	**$329,000**

Cost to Preserve Additional Wetlands	**Cost**
Total Additional Development Cost Due to Wetland Avoidance	**$225,000**
Total Additional Construction Cost Due to Wetland Avoidance	**$329,000**
Total Cost to Preserve Additional Wetlands	**$554,000**

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Folsom Plan Area Specific Plan

Carpenter Ranch - Alternative C

(Lot 39)

Proposed Project with Additional Avoidance Areas

Cost Impacts due to Extension of the Wetland Preserve

Land Use Impacts	Dev. Land Use Area (ac)	Unit Allocation	Revised Land Use Area (ac)	Revised Dwelling Unit Allocation	Prop. Project Building SF	Alternative Project Bldg. SF
Single Family						
Lot 39	109.4	338	107.2	321		
Land Use Impacts Totals	109.4	338	107.2	321	0	0

Additional In-Tract Construction Cost	Units	Quantity	Unit Cost	Amount
Lot 39				
Retaining Wall	sf	4,700	$70	$329,000
Additional In-Tract Construction Cost Total				$329,000