

ATTACHMENT 1: NATURAL RESOURCES CONSERVATION SERVICE LAND EVALUATION EXPLANATIONS AND CALCULATIONS—MERCED COUNTY

INTRODUCTION

This attachment provides an explanation for corridor assessment points assigned to the Central Valley Wye alternatives in part VI of the NRCS-CPA-106 form prepared for Merced County.

Explanations

SR 152 (North) to Road 13 Wye Alternative

- 1. How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?** The regional consultant generated a buffer of 1 mile around the Central Valley Wye alternatives, including the temporary construction easement, to determine the total acreage of land within a 1-mile radius of the alternative in Merced County. The buffer was overlaid on a map of the Farmland Mapping and Monitoring Program categories, which include Urban and Built-Up Land. For this analysis, Urban and Built-Up Land is considered urban use (DOC 2014). Then, the acreage within the buffer that is classified as Urban and Built-Up Land was calculated using a Geographic Information System, and the remaining acreage was considered nonurban use. The results indicated that over 99 percent of the total acreage within the buffer was nonurban use. This criterion received a score of 15.
- 2. How much of the perimeter of the site borders on land in nonurban use?** The length of the perimeter of the alternative, including the temporary construction easement, was measured by the regional consultant to determine the total length of the perimeter in Merced County. The regional consultant then calculated the proportion of the alternative perimeter that borders on land classified as Urban and Built-Up Land, and the remaining proportion of the perimeter was considered to border nonurban use. The results indicated that 100 percent of the alternative perimeter borders on land in nonurban use. This criterion received a score of 10.
- 3. How much of the site has been farmed more than 5 of the last 10 years?** According to satellite imagery analysis of the Central Valley Wye alternatives area for the years between 2005 and 2015¹ as well as information from the Merced County Agricultural Commissioner (Robinson 2015), in general, almost all of the properties (i.e., over 90 percent) in the vicinity of this alternative have been consistently farmed for 10 or more years. This criterion received a score of 20.
- 4. Is the site subject to state or local government policies or programs to protect farmland or covered by private programs to protect farmland?** The Central Valley Wye alternatives area, including remnant parcels that would likely not be suitable for farming after construction of the Central Valley Wye alternatives, in Merced County was overlaid on a map of Protected Farmland (DOC 2014), defined as lands enrolled in Williamson Act or Farmland Security Zone contracts by the regional consultant. No farmlands are protected by private programs such as conservation easements. The results indicated that 46 percent of the land within the project footprint in Merced County is Protected Farmland. This criterion received a score of 20.
- 5. Are the farm units containing the site as large as the average-size farming unit in the county?** The average size farm in Merced County was 394 acres in 2012 (U.S. DOA 2012), the most recent year for which average farm size data are available. The alternative traverses farm units that are an average of 258 acres, or approximately 35 percent smaller than the average farm unit. This criterion received a score of 3.
- 6. How much of the remaining land on the farm will become nonfarmable if this site is selected?** In some cases this alignment deviates from transportation corridors and bisects or

¹ Satellite imagery was not available for the years of 2007, 2008, and 2013.

otherwise severs agricultural parcels. Some of the remnant parcels resulting from this severance may not be viable for continued agricultural use. The regional consultant team used GIS software to identify parcels of Important Farmland that would be 20 acres or less following severance due to construction of the HSR system. It was assumed that parcels greater than 20 acres would be viable for continued agricultural use. Analysts then evaluated the characteristics of each of the remnant parcels 20 acres or less using criteria described in Appendix 3.14-C, Remnant Parcel Analysis and Important Farmland Mitigation, to determine which parcels would be viable for continued agricultural use and which parcels would likely result in conversion to nonagricultural use. The acreage of the remainder parcels determined not viable for continued agricultural use was compared to the acreage of the original parcels. The results indicated that the acreage of nonviable remainder parcels on farmable land would total approximately 1.5 percent of the acreage of the original parcels. This criterion received a score of 0.

7. **Does the site have available adequate supply of farm support services and markets?** According to the Merced County Agricultural Commissioner (Robinson 2015), the area in the vicinity of this alternative has been farmed for 50 to 100 years and it has adequate support services and markets. This alternative would not have an impact on farm services. This criterion received a score of 5.
8. **Does this site have substantial and well maintained on-farm investments such as barns, fruit trees and vines, field terraces, drainage, irrigation, waterways, and other soil and water conservation measures?** According to satellite imagery analysis of the Central Valley Wye alternatives area by the regional consultant, the overall amount of on-farm investment is high. Ancillary agricultural structures, barns, and large stables/feeding bins were observed on the farms. Soil and water conservation measures have been applied to many of the fields. This criterion received a score of 20.
9. **Would this project, by converting the land to nonagricultural use, reduce the support for farm support services in the area?** The regional consultant overlaid the alternative on a map of the Farmland Mapping and Monitoring Program categories to determine how many acres of Important Farmland would be permanently converted. Considering there are approximately 1,158,900 acres of Important Farmland and Grazing Land in Merced County (DOC 2014), the permanent conversion of 688 acres of Important Farmland and Grazing in Merced County under this alternative would result in no substantial reduction in demand for farm support services in the area. This criterion received a score of 3.
10. **Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of the surrounding farmland to nonagricultural use?** The Central Valley Wye alternatives would not include any stations. In contrast to stations, which could induce population growth and farmland conversion, trackway use is largely compatible with adjacent agriculture and would not induce urban development. Therefore, it is unlikely that trackway use would contribute to eventual conversion of surrounding farmland to nonagricultural use. This criterion received a score of 1.

Additional Notes

This entire alternative is 50 miles long, with 18 miles in Merced County, and is the shortest alternative.

SR 152 (North) to Road 19 Wye Alternative

1. **How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?** The regional consultant used the same methodology described in Criterion 1 for the State Route (SR) 152 (North) to Road 13 Wye Alternative. The results indicated that over 99 percent of the total acreage within the buffer was nonurban use. This criterion received a score of 15.

2. **How much of the perimeter of the site borders on land in nonurban use?** The regional consultant used same methodology described in Criterion 2 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that 98 percent of the perimeter of the alternative borders nonurban use. This criterion received a score of 10.
3. **How much of the site has been farmed more than 5 of the last 10 years?** According to satellite imagery analysis of the project footprint for the years between 2005 and 2015² as well as information from the Merced County Agricultural Commissioner (Robinson 2015), in general, almost all of the properties (i.e., over 90 percent) in the vicinity of this alternative have been consistently farmed for 10 or more years. This criterion received a score of 20.
4. **Is the site subject to state or local government policies or programs to protect farmland or covered by private programs to protect farmland?** The regional consultant used the same methodology described in Criterion 4 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that 39 percent of the land within the project footprint in Merced County is Protected Farmland. This criterion received a score of 20.
5. **Are the farm units containing the site as large as the average-size farming unit in the county?** The regional consultant used the same methodology described in Criterion 5 for the SR 152 (North) to Road 13 Wye Alternative. The alternative traverses farm units that are an average of 272 acres, or approximately 31 percent smaller than the average farm unit. This criterion received a score of 4.
6. **How much of the remaining land on the farm will become nonfarmable if this site is selected?** The regional consultant used the same methodology described in Criterion 6 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that the acreage of nonviable remainder parcels on farmable land would total approximately 1.1 percent of the acreage of the original parcels that would be within the project footprint of this alternative. This criterion received a score of 0.
7. **Does the site have available adequate supply of farm support services and markets?** The regional consultant used the same methodology described in Criterion 7 for the SR 152 (North) to Road 13 Wye Alternative. This alternative would not have an impact on farm services. This criterion received a score of 5.
8. **Does this site have substantial and well maintained on-farm investments such as barns, fruit trees and vines, field terraces, drainage, irrigation, waterways, and other soil and water conservation measures?** The regional consultant used the same methodology described in Criterion 8 for the SR 152 (North) to Road 13 Wye Alternative. The overall amount of on-farm investment is high. Ancillary agricultural structures, barns, and large stables/feeding bins were observed on the farms. Soil and water conservation measures have been applied to many of the fields. This criterion received a score of 20.
9. **Would this project, by converting the land to nonagricultural use, reduce the support for farm support services in the area?** The regional consultant used the same methodology described in Criterion 9 for the SR 152 (North) to Road 13 Wye Alternative. Considering there are approximately 1,158,900 acres of Important Farmland and Grazing Land in Merced County (DOC 2014), the permanent conversion of 798 acres of Important Farmland and Grazing Land in Merced County under this alternative would result in no substantial reduction in demand for farm support services in the area. This criterion received a score of 3.
10. **Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of the surrounding farmland to nonagricultural use?** The regional consultant used the same methodology described in Criterion 10 for the SR 152 (North) to Road 13 Wye Alternative. It is unlikely that

² Satellite imagery was not available for the years of 2007, 2008, and 2013.

the trackway would convert the surrounding farmland to nonagricultural use. This criterion received a score of 1.

Additional Notes

This entire alternative is 55 miles long, with 20 miles in Merced County, and is the longest alternative.

Avenue 21 to Road 13 Wye Alternative

1. **How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?** The regional consultant used the same methodology described in Criterion 1 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that over 99 percent of the total acreage within the buffer was nonurban use. This criterion received a score of 15.
2. **How much of the perimeter of the site borders on land in nonurban use?** The regional consultant used the same methodology described in Criterion 2 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that 100 percent of the perimeter of the project footprint borders nonurban use. This criterion received a score of 10.
3. **How much of the site has been farmed more than 5 of the last 10 years?** According to satellite imagery analysis of the Central Valley Wye alternatives area for the years between 2005 and 2015³ as well as information from the Merced County Agricultural Commissioner (Robinson 2015), in general, almost all of the properties (i.e., over 90 percent) in the vicinity of this alternative have been consistently farmed for 10 or more years. This criterion received a score of 20.
4. **Is the site subject to state or local government policies or programs to protect farmland or covered by private programs to protect farmland?** The regional consultant used the same methodology described in Criterion 4 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that 39 percent of the land within the project footprint in Merced County is Protected Farmland. This criterion received a score of 20.
5. **Are the farm units containing the site as large as the average-size farming unit in the county?** The regional consultant used the same methodology described in Criterion 5 for the SR 152 (North) to Road 13 Wye Alternative. The alternative traverses farm units that are an average of 205 acres, or approximately 48 percent smaller than the average farm unit. This criterion received a score of 1.
6. **How much of the remaining land on the farm will become nonfarmable if this site is selected?** The regional consultant used the same methodology described in Criterion 6 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that the acreage of nonviable remainder parcels on farmable land would total approximately 1.5 percent of the acreage of the original parcels that would be within the footprint of this alternative. This criterion received a score of 0.
7. **Does the site have available adequate supply of farm support services and markets?** The regional consultant used the same methodology described in Criterion 7 for the SR 152 (North) to Road 13 Wye Alternative. This alternative would not have an impact on farm services. This criterion received a score of 5.
8. **Does this site have substantial and well maintained on-farm investments such as barns, fruit trees and vines, field terraces, drainage, irrigation, waterways, and other soil and water conservation measures?** The regional consultant used the same methodology described in Criterion 8 for the SR 152 (North) to Road 13 Wye Alternative. The overall amount of on-farm investment is high. Ancillary agricultural structures, barns, and large stables/feeding bins were observed on the farms. Soil and water conservation measures have been applied to many of the fields. This criterion received a score of 20.

³ Satellite imagery was not available for the years of 2007, 2008, and 2013.

9. **Would this project, by converting the land to nonagricultural use, reduce the support for farm support services in the area?** The regional consultant used the same methodology described in Criterion 9 for the SR 152 (North) to Road 13 Wye Alternative. Considering there are approximately 1,158,900 acres of Important Farmland and Grazing Land in Merced County (DOC 2014), the permanent conversion of 618 acres of Important Farmland and Grazing Land in Merced County under this alternative would result in no substantial reduction in demand for farm support services in the area. This criterion received a score of 3.
10. **Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of the surrounding farmland to nonagricultural use?** The regional consultant used the same methodology described in Criterion 10 for the SR 152 (North) to Road 13 Wye Alternative. It is unlikely that the trackway would convert surrounding farmland to nonagricultural use. This criterion received a score of 1.

Additional Notes

This entire alternative is 52 miles long, with 17 miles in Merced County.

SR 152 (North) to Road 11 Wye Alternative

1. **How much land is in nonurban use within a radius of 1.0 mile from where the project is intended?** The regional consultant used the same methodology described in Criterion 1 for the State Route (SR) 152 (North) to Road 13 Wye Alternative. The results indicated that over 99 percent of the total acreage within the buffer was nonurban use. This criterion received a score of 15.
2. **How much of the perimeter of the site borders on land in nonurban use?** The regional consultant used same methodology described in Criterion 2 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that 98 percent of the perimeter of the alternative borders nonurban use. This criterion received a score of 10.
3. **How much of the site has been farmed more than 5 of the last 10 years?** According to satellite imagery analysis of the Central Valley Wye alternatives area for the years between 2005 and 2015⁴ as well as information from the Merced County Agricultural Commissioner (Robinson 2015), in general, almost all of the properties (i.e., over 90 percent) in the vicinity of this alternative have been consistently farmed for 10 or more years. This criterion received a score of 20.
4. **Is the site subject to state or local government policies or programs to protect farmland or covered by private programs to protect farmland?** The regional consultant used the same methodology described in Criterion 4 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that 51 percent of the land within the project footprint in Merced County is Protected Farmland. This criterion received a score of 20.
5. **Are the farm units containing the site as large as the average-size farming unit in the county?** The regional consultant used the same methodology described in Criterion 5 for the SR 152 (North) to Road 13 Wye Alternative. The alternative traverses farm units that are an average of 294 acres, or approximately 25 percent smaller than the average farm unit. This criterion received a score of 5.
6. **How much of the remaining land on the farm will become nonfarmable if this site is selected?** The regional consultant used the same methodology described in Criterion 6 for the SR 152 (North) to Road 13 Wye Alternative. The results indicated that the acreage of nonviable remainder parcels on farmable land would total 2.7 percent of the acreage of the

⁴ Satellite imagery was not available for the years of 2007, 2008, and 2013.

original parcels that would be within the footprint of this alternative. This criterion received a score of 0.

- 7. Does the site have available adequate supply of farm support services and markets?** The regional consultant used the same methodology described in Criterion 7 for the SR 152 (North) to Road 13 Wye Alternative. This alternative would not have an impact on farm services. This criterion received a score of 5.
- 8. Does this site have substantial and well maintained on-farm investments such as barns, fruit trees and vines, field terraces, drainage, irrigation, waterways, and other soil and water conservation measures?** The regional consultant used the same methodology described in Criterion 8 for the SR 152 (North) to Road 13 Wye Alternative. The overall amount of on-farm investment is high. Ancillary agricultural structures, barns, and large stables/feeding bins were observed on the farms. Soil and water conservation measures have been applied to many of the fields. This criterion received a score of 20.
- 9. Would this project, by converting the land to nonagricultural use, reduce the support for farm support services in the area?** The regional consultant used the same methodology described in Criterion 9 for the SR 152 (North) to Road 13 Wye Alternative. Considering there are approximately 1,158,900 acres of Important Farmland and Grazing Land in Merced County (DOC 2014), the permanent conversion of 718 acres of Important Farmland and Grazing Land in Merced County under this alternative would result in no substantial reduction in demand for farm support services in the area. This criterion received a score of 3.
- 10. Is the kind and intensity of the proposed use of the site sufficiently incompatible with agriculture that it is likely to contribute to the eventual conversion of the surrounding farmland to nonagricultural use?** The regional consultant used the same methodology described in Criterion 10 for the SR 152 (North) to Road 13 Wye Alternative. It is unlikely that the trackway would convert the surrounding farmland to nonagricultural use. This criterion received a score of 1.

Additional Notes

This entire alternative is 52 miles long, with 19 miles in Merced County.

References

ARWS	Associated Right of Way Services, Inc.
DOC	California Department of Conservation
U.S. DOA	United States Department of Agriculture

- Associated Right of Way Services, Inc. (ARWS). 2016a. Remainder Analysis (Step 2): Important Farmland Viability, SR 152 North to Road 13, SR 152 North to Road 19, Avenue 21 to Road 13. July 1, 2016.
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- . 2016c. Remainder Analysis (Step 2): Important Farmland Viability, SR 152 North to Road 11. October 12, 2016.
- California Department of Conservation (DOC). 2014. Merced County 2012-2014 Land Use Conversion. *Farmland Mapping and Monitoring Program*. Available: <http://www.conservation.ca.gov/dlrp/fmmp/Pages/Merced.aspx>. Accessed: November 8, 2016.
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- United States Department of Agriculture (U.S. DOA). 2012. 2012 Census Volume 1, Chapter 2, County Level Data. Available: http://www.agcensus.usda.gov/Publications/2012/Full_Report/Volume_1,_Chapter_2_County_Level/California/cav1.pdf. Accessed: November 8, 2016.