Memorandum

ТО	Tim Ruff	FROM	Abena Darden
	Norcal Land		January 27, 2016
COMPANY	LEED for Neighborhood Development	DATE	January 27, 2010
RE	v4 Prerequisite Assessment – DRAFT v1.1	PROJECT NO	U16019.00
СС	Lynn N. Simon, TT; File	PROJECT NAME	Nishi Development

Executive Summary

Thornton Tomasetti (TT) has been tasked to review the Nishi Development and assess whether it can achieve a LEED for Neighborhood Development (ND) certification. TT's first step included assessing the LEED for Neighborhood Development v4 prerequisites in the Smart Location & Linkages (SLL) and Neighborhood Pattern and Design (NPD) categories. Thornton Tomasetti did not review the Green Building & Infrastructure prerequisites as the state green building code, CALGreen, and Title 24-2013 energy requirements lend themselves well to complying with the four prerequisites under that category.

The report is divided into the two credit categories, SLL and NPD, and includes a breakdown of the prerequisites requirements, analysis of the requirements, and summary of compliance. We have included only the requirements we felt were relevant to the project. For a full list of the requirements, please visit: http://www.usgbc.org/credits/neighborhood-development-plan/v4.

Based upon the documents we have been provided (i.e. *Sustainability Implementation Plan*, and documents found online such as the *Environmental impact Report*), and discussion with Adam Maynard, a US Green Building Council (USGBC) staff person with the LEED ND team, we have determined that pursuing a LEED for Neighborhood Development certification for the project is not feasible at this time.

Presently, the project is not meeting four of the eight evaluated prerequisites. While three of these could be met with design changes and additional effort on behalf of the team and developer, one prerequisite is outside of the control of the project team: SLLp Smart Location.

The LEED for Neighborhood Development rating system is best geared towards previously developed, infill projects. These project types have streamlined compliance options for many of the prerequisites, particularly under the SLL category. While greenfield sites can apply for certification, these sites often face the challenges outlined below if they are not directly connected to adjacent developed land.

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 2

SUMMARY OF PREREQUISITES

LEED ND Prerequisites	Compliance with Prerequisite				
	Yes	Maybe	No		
SMART LOCATION & LINKAGES (SLL)					
Smart Location			X		
Imperiled Species and Ecological Communities Conservation		X			
Wetland and Water Body Conservation			Х		
Agricultural Land Conservation	Х				
Floodplain Avoidance		Х			
NEIGHBORHOOD PATTERN & DESIGN (NPD)					
Walkable Streets	Х				
Compact Development	Х				
Open and Connected Community			Х		

SMART LOCATION & LINKAGES

SLLp Smart Location

Requirements

1. Locate the project on a site served by existing water and wastewater infrastructure OR within a legally adopted, publicly owned, planned water and wastewater service area.

AND

- 2. Meet one of the following:
 - a. Infill site
 - b. Adjacent site with connectivity
 - c. Transit Corridors
 - d. Access to basic neighbor assets

<u>Analysis</u>

- Thornton Tomasetti could not find evidence that the project area is located within a
 planned water or wastewater service area, nor is the project currently served by existing
 water or wastewater infrastructure (reference: City of Davis General Plan, Nishi
 Gateway Preliminary Site Water, Sewer and Drainage Infrastructure Concepts Study,
 Environmental Impact Report, 2008 City of Davis Sphere of Influence Update.)
- 2. Thornton Tomasetti evaluated each of the qualifying items under Item 2:
 - a. Infill site Project does not qualify; at least 75% of the surrounding area is not previously developed

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 3

- b. Adjacent site with connectivity Project does not qualify: 40 intersections per square mile, also there are not through connections at least every 600 feet (there are no exemptions to this)
- c. Transit Corridors Further evaluation required.
- d. Access to basic neighbor assets Project qualifies: there are seven diverse uses along Olive Drive and Richards Blvd that are within a 0.5 mile walk distance from the project's geographic center.

The 2008 City of Davis Combined Municipal Service Review/Sphere of Influence Update includes the Nishi project area as an area of potential future expansion. However, the project area has not been formally annexed by the City of Davis, and as such does not appear to within a legally adopted, publicly owned, planned water and wastewater service area.

Summary

The project does not comply with this prerequisite. While the project does meet the requirements of item 2.d, Access to basic neighborhood services, both elements of the prerequisite must be met for prerequisite compliance.

TT recommends that a project LEED Interpretation request be submitted to the USGBC for a formal ruling on whether or not the "Sphere of Influence" document meets the prerequisite intent. This process takes approximately two to four weeks. Prior to the formal LEED Interpretation process, TT will engage in further conservations with Adam Maynard regarding this issue and how to best proceed with the Interpretation request.

SLLp Imperiled Species and Ecological Communities Conservation

Requirements

Consult with the state Natural Heritage Program and state fish and wildlife agencies to determine if one of the following have been or likely to be found on the project site because of the presence of suitable habitat and nearby occurrences:

- 1. Species listed as threaten or endangered under the US Endangered Species Act or the state's endangered species act
- 2. Species or ecological communities classified by NaturServe as GH, G1, or G2
- 3. Species listed as threatened or endangered specified under local equivalent standards

Case 2. Sites with Affected Species or Ecological Community: If the site has any affected species or ecological communities, meet either of the following two options.

 Option 1. Habitat Conservation Plan: Comply with an approved habitat conservation plan under the Endangered Species Act for each identified species or ecological community.

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 4

- OR Option 2. Habitat Conservation Plan Equivalent: Work with a qualified biologist, a nongovernmental conservation organization, or the appropriate state, regional, or local agency to create and implement a conservation plan that includes the actions:
 - 1. Identify and map the extent of the habitat and the appropriate buffer, not less than 100 feet (30 meters), according to best available scientific information.
 - 2. If on-site protection can be accomplished, analyze threats from development and develop a monitoring and management plan that eliminates or significantly reduces the threats.
 - 3. Protect the identified habitat and buffer in perpetuity by donating or selling the land or a conservation easement on the land to an accredited land trust, conservation organization, or relevant government agency.
 - 4. If any portion of the identified habitat and buffer cannot be protected in perpetuity, quantify the effects by acres (hectares) or number of plants and/or animals affected, and protect from development in perpetuity habitat of similar or better quality, on-site or off-site, by donating or selling a conservation easement on it to an accredited land trust, conservation organization, or relevant government agency. The donation or easement must cover an amount of land equal to or larger than the area that cannot be protected.

Analysis

The Environmental Impact Report reports that several special status species and habitat occur within the project area, therefore Case 2 applies to the project. There is a Yolo County Habitat Conservation Plan in draft form that has not been legally adopted. The project should then follow Option 2, Habitat Conservation Plan Equivalent.

Summary

Project may comply if the following conditions are met:

Prepare an "equivalent" Habitat Conservation Plan for the project area since the Yolo County Habitat Conservation Plan is in draft format¹.

The Plan must address the following:

- Map habitat and buffer zone
- Analyze and manage threats
- Provide perpetual protection
- Set aside equivalent area if perpetual protection is not possible

Local conservation and wildlife agencies should be included in preparation and implementation of the Plan equivalent.

¹ TT has reached out to the Yolo County Habitat Conservancy to inquire about the timeframe for adoption of the Yolo County Habitat Conservation Plan. At the time of writing, our inquiry has not been responded to. TT will update this assessment with new information as it becomes available.

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 5

Upon discussion with Adam Maynard with the USGBC, this course of action was determined to be best for the Project.

SLLp Wetland and Water Body Conservation

Requirements

Limit development's effects on wetlands, water bodies, and surrounding buffer land according to the requirements below:

Case 2: Sites with Sensitive Areas: If the site has pre-project wetlands, water bodies, land within 50 feet (15 meters) of wetlands, or land within 100 feet (30 meters) of water bodies, select one of the following two options:

- Option 1. No Development on Wetlands and Water Bodies: Locate the project such that pre-project wetlands, water bodies, land within 50 feet (15 meters) of wetlands, and land within 100 feet (30 meters) of water bodies are not affected by new development, unless the development is minor improvements or is on previously developed land.
- Option 2: Rainwater Management and Protected Buffers: Earn at least 1 point under GIB Credit Rainwater Management, and limit any development beyond minor improvements to less than the percentage of buffer land listed in Table 1 in the Reference Guide.

AND

FOR ALL PROJECTS: Comply with all local, state, and federal regulations pertaining to wetland and water body conservation.

Direct impacts to wetlands and water bodies are prohibited, except for minimal-impact structures, such as an elevated boardwalk, that allow access to the water for educational and recreational purposes. Structures that protrude into wetlands or water bodies may be replaced, provided the replacement structure has the same or smaller footprint and a similar height.

<u>Analysis</u>

The Putah Creek runs across the north-eastern boundary of the project site. Olive Drive is proposed to extend into the project site, which would cross over Putah Creek and within the 100 foot buffer zone. The project must follow Case 2. Site with Sensitive Areas, Option 1 or 2. For Option 2, based upon the project density, no more than 20% of the buffer zone can be impacted.

Summary

The project does not currently comply with this prerequisite. While the less than 20% of the buffer zone would be impacted, the development of the road over the creek does not fall under any of the exemptions below:

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 6

- i. Previously developed land
- ii. Man-made water bodies
- iii. Man-made linear wetlands
- iv. Wetlands that were man-made incidentally and have been rated "poor" for all measured wetland functions

A 160 foot bridge (measured within the property boundary) could be constructed over the creek that starts outside of the creek's 100 foot buffer zone. Any impacts within the buffer zone would need to be limited to 20% of the total buffer zone, which is approximately 4,709 square feet.

Upon discussion with Adam Maynard with the USGBC, this course of action was determined to be the best solution for the Project in order to meet this prerequisite.

SLLP Agricultural Land Conservation

Requirements

Locate the project on a site that is not within a state or locally designated agricultural preservation district (or local equivalent for projects outside the U.S.), unless any changes made to the site conform to the requirements for development within the district (as used in this requirement, "district" does not equate to land-use zoning).

Meet the requirements of the following:

Option 4. Sites without Affected Soils: Locate the project's development footprint such that it does not disturb prime farmland, unique farmland, or farmland of statewide or local importance as defined by the U.S. Code of Federal Regulations, Title 7, Volume 6, Parts 400 to 699, Section 657.5 and identified in a state Natural Resources Conservation Service soil survey (or local equivalent for projects outside the U.S.).

Analysis

Thornton Tomasetti reviewed the California Farmland Mapping and Monitoring Program database and EIR report and found that the soils are currently classified as "Grazing," and not Prime Agricultural.

Summary

Project complies with Option 4. Site without Affected Soils. The project site is classified as "Grazing" land per the California Farmland Mapping and Monitoring Program.

Refer to Appendix A for a figure of the site designation.

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 7

SLLp Floodplain Avoidance

Requirements

Case 3. All Other Sites with Flood Hazard Areas The project must comply with one of the following:

- Option 1 American Society of Civil Engineers Standard. On portions of the site that are not previously developed, do not develop on land that is within either a regulatory floodway or a coastal high hazard area. On all other portions of the site that are not previously developed and in the flood hazard zone, design buildings in accordance with ASCE 24.
- Option 2 National Flood Insurance Program. On portions of the sire that are not previously developed and in the flood hazard area, do not develop on land that is within either a regulatory floodway or a coastal high hazard area. On all other portions of the site that are not previously developed and within the flood hazard area, design buildings in accordance with NFIP.

Analysis

Case 3 applies to the Nishi project. The project site along the Putah Creek is within a 100-year Flood Zone.

Summary

The project can comply with the requirements. Aside from the roadway, development is not planned for the Flood Hazard zones; these areas will remain as open space. Discussion with Adam Maynard revealed that the roadway located within the floodplain would need to comply with prerequisite requirements. The road must be developed in accordance with the American Society of Civil Engineers Standard or the National Flood Insurance Program. If a bridge is constructed for compliance with SLLp Wetland and Water Body Conservation, this may meet the requirements of the SLLp Floodplain Avoidance requirements.

Refer to Appendix B for a figure of the floodplain zone.

NEIGHBORHOOD PATTERN & DESIGN

NPDp Walkable Streets

Requirements

Design and build the project to achieve the following:

- 1. 90% of new buildings have a functional entry onto the circulation network or other public space, but not a parking lot.
- 2. At least 15% of the block length of the existing and new circulation networks within and bordering the project has a minimum building-height-to-street-centerline ratio of 1:15.

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 8

- 3. Continuous sidewalks or equivalent all weather routes for walking are provided along both sides of 90% of the circulation network bordering the project. New sidewalks must be at least 8 feet wide on retail or mixed-use blocks and 5 feet wide on all other blocks.
- 4. No more than 20% of the block length of the circulation network within the project is faced by garage and service bay openings.

Analysis

With the information in hand, Thornton Tomasetti could not undertake a full analysis of the prerequisite requirements in relation to the project's design. However, visual analysis of the site plan indicates that the project should readily meet the requirements.

Summary

Project appears to comply with all four requirements.

NPDp Compact Development

Requirements

Design and build the project to meet the densities specified below. Minimum densities must be met for both (1) the entire project at full build-out and (2) the portion of the project that will be built within five years of the date that the first new building of any type is occupied.

Case 1. Projects with Access to Quality Transit: For projects with existing and/or planned transit service that meets or exceeds the 2-point threshold SLLc3, build at the following densities, based on the walk distances to the transit service specified in SLLc3:

- a. For residential components located within the walk distances: 12 or more dwelling units per acre of buildable land available for residential uses.
- b. For residential components falling outside the walk distance: 7 or more dwelling units per acre of buildable land available for residential uses.
- c. For nonresidential components located within the walk distances: 0.80 floor-area ratio (FAR) or greater of buildable land available for nonresidential uses.
- d. Or nonresidential components falling outside the walk distances: 0.50 FAR or greater of buildable land available for nonresidential uses. Design and build the project to meet the densities specified below. Minimum densities must be met for both (1) the entire project at full build-out and (2) the portion of the project that will be built within five years of the date that the first new building of any type is occupied.

If the project location is served by a transit agency that has specified guidelines for minimum service densities that are greater than the densities required by this prerequisite, the project must achieve those service densities instead.

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 9

Case 2. All Other Projects: Build any residential components of the project at a density of 7 or more dwelling units per acre (17.5 DU per hectare) of buildable land available for residential uses. Build any nonresidential components of the project at a density of 0.50 or higher FAR for the buildable land available for nonresidential uses.

AND

FOR ALL PROJECTS: Density calculations include all planned and existing buildings within the project boundary, excluding those portions of parking structures devoted exclusively to parking. If the residential component of the project meets the minimum density requirement but the nonresidential component does not, or vice versa, include only the qualifying density. Use that component's dwelling units or nonresidential floor area in the numerator and the total buildable land area in the denominator. If the resulting density meets the minimum requirement, the prerequisite is achieved.

<u>Analysis</u>

As detailed transit information to determine compliance with SLLc Access to Quality Transit was not available, Thornton Tomasetti evaluated Case 2 only. For LEED ND purposes, density is calculated based upon buildable land areas, which includes any non-protected open space and parks. The LEED ND residential density is 24.73 dwelling units per acre and the non-residential density is 0.69 FAR.

Summary

The project complies with Case 2.

NPDp Open and Connected Community

Requirements

Meet the requirements of Case 1 if the project has no circulation network intersections within the project boundary and is five acres or less in size. All other projects must meet Case 2.

Case 2. Internal Connectivity. Any part of the circulation network counted toward the connectivity requirement must be available for general public use at all times and not gated. Additionally, no more than 10% of the project area may be accessed via circulation network that is gated. Education campuses, health care campuses, and military bases where gates are used for security purposes are exempt from the 10% limit, and intersections within those projects may be counted toward the connectivity requirement.

Design and build the project with at least one through-connection (of the circulation network) intersecting or terminating at the project boundary at least every 800 feet (245 meters), or at existing abutting intervals and intersections of the circulation network, whichever is the shorter distance. These requirements do not apply to portions of the boundary where connections cannot be made because of physical obstacles, such as prior platting of property, construction of existing buildings or other barriers, slopes steeper than 15%, wetlands and water bodies,

Memorandum

Re: Nishi Development LEED ND v4 Prerequisite Assessment – DRAFT v1.1 Page 10

railroad and utility rights-of-way, existing limited-access motor vehicle rights-of-way, and parks and dedicated open space.

Analysis

The total project area is 0.07 square miles (46.9 acres), which requires a minimum of 10 eligible intersections. To count as an eligible intersection, one must not enter and exit through the same intersection. Any intersections beyond that point also do not count as eligible. Thornton Tomasetti counted three eligible intersections within the project. The project is also exempt from the 800 foot requirement as the physical barriers, the 80 freeway, railroad, and existing buildings exempt this requirement.

Summary

Project does not comply. Additional eligible intersections must be constructed within the project boundary. These intersections could be a part of the multi-use bicycle and pedestrian trail system.

LEED ND PROCESS

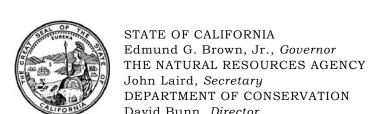
The LEED certification process for v4 ND projects allows for projects to submit the SLL and NPD prerequisites for formal preliminary "Prerequisite Review" if there are doubts as to whether or not project is eligible for certification. This optional review can be a useful official determination before investing further in submission preparation. A SLL and NPD prerequisite review requires projects to be registered with the Green Business Certification Inc. (GBCI) for a fee of \$1,500. In addition, the fee for the Prerequisite Review is \$2,250. The total timeframe for this review process is three to five months, which includes documentation preparation, preliminary review by the USGBC, preparation of project team's responses to the preliminary review, and final review by USGBC.

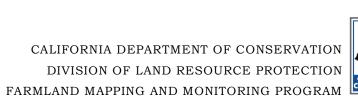
Another available review to ND projects early in the planning stages is a "Letter of Support" review. This optional review is a full review of the all of the prerequisites and credits for projects that have not yet received 100% land entitlements. In addition to the \$1500 registration fee, the project must pay a review fee of \$27,415. The total timeframe for this review process is four to six months, which includes documentation preparation, preliminary review by the USGBC, preparation of project team's responses to the preliminary review, and final review by USGBC.

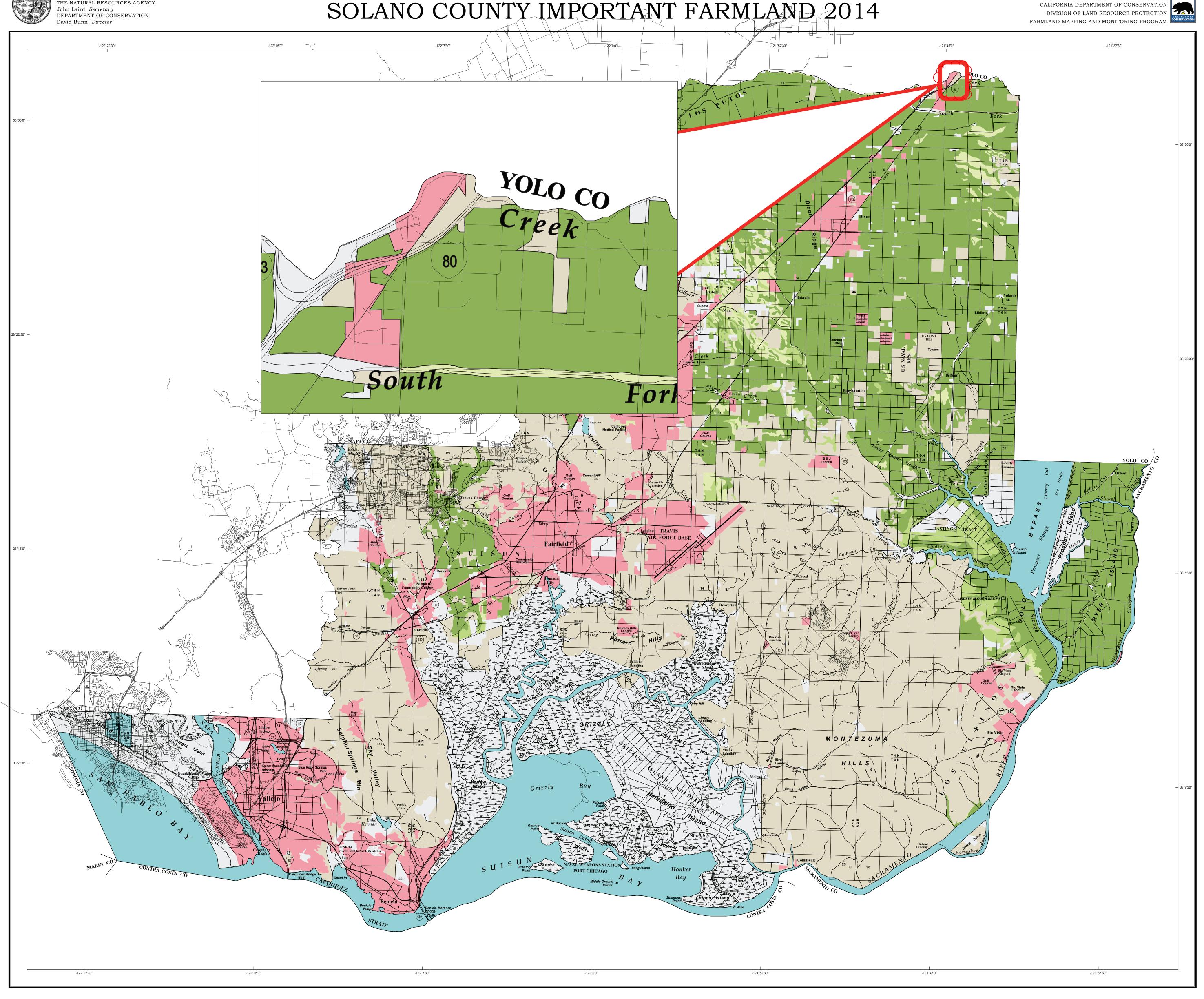
Memorandum

APPENDIX A

CA Farmland Mapping and Monitoring Program
Nishi Development Designation







PRIME FARMLAND

PRIME FARMLAND HAS THE BEST COMBINATION OF PHYSICAL AND CHEMICAL FEATURES ABLE TO SUSTAIN LONG-TERM AGRICULTURAL PRODUCTION. THIS LAND HAS THE SOIL QUALITY, GROWING SEASON, AND MOISTURE SUPPLY NEEDED TO PRODUCE SUSTAINED HIGH YIELDS. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

FARMLAND OF STATEWIDE IMPORTANCE

FARMLAND OF STATEWIDE IMPORTANCE IS SIMILAR TO PRIME FARMLAND BUT WITH MINOR SHORTCOMINGS, SUCH AS GREATER SLOPES OR LESS ABILITY TO STORE SOIL MOISTURE. LAND MUST HAVE BEEN USED FOR IRRIGATED AGRICULTURAL PRODUCTION AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

UNIQUE FARMLAND

UNIQUE FARMLAND CONSISTS OF LESSER QUALITY SOILS USED FOR THE PRODUCTION OF THE STATE'S LEADING AGRICULTURAL CROPS. THIS LAND IS USUALLY IRRIGATED, BUT MAY INCLUDE NONIRRIGATED ORCHARDS OR VINEYARDS AS FOUND IN SOME CLIMATIC ZONES IN CALIFORNIA. LAND MUST HAVE BEEN CROPPED AT SOME TIME DURING THE FOUR YEARS PRIOR TO THE MAPPING DATE.

GRAZING LAND

GRAZING LAND IS LAND ON WHICH THE EXISTING VEGETATION IS SUITED TO THE GRAZING OF LIVESTOCK.

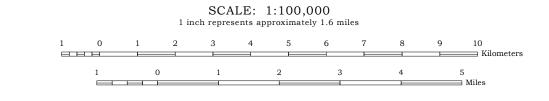
URBAN AND BUILT-UP LAND

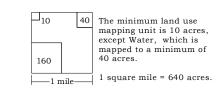
URBAN AND BUILT-UP LAND IS OCCUPIED BY STRUCTURES WITH A BUILDING DENSITY OF AT LEAST 1 UNIT TO 1.5 ACRES, OR APPROXIMATELY 6 STRUCTURES TO A 10-ACRE PARCEL. COMMON EXAMPLES INCLUDE RESIDENTIAL, INDUSTRIAL, COMMERCIAL, INSTITUTIONAL FACILITIES, CEMETERIES, AIRPORTS, GOLF COURSES, SANITARY LANDFILLS, SEWAGE TREATMENT, AND WATER CONTROL STRUCTURES.

OTHER LAND

OTHER LAND IS LAND NOT INCLUDED IN ANY OTHER MAPPING CATEGORY. COMMON EXAMPLES INCLUDE LOW DENSITY RURAL DEVELOPMENTS, BRUSH, TIMBER, WETLAND, AND RIPARIAN AREAS NOT SUITABLE FOR LIVESTOCK GRAZING, CONFINED LIVESTOCK, POULTRY, OR AOUACULTURE FACILITIES, STRIP MINES, BORROW PITS, AND WATER BODIES SMALLER THAN 40 ACRES. VACANT AND NONAGRICULTURAL LAND SURROUNDED ON ALL SIDES BY URBAN DEVELOPMENT AND GREATER THAN 40 ACRES IS MAPPED AS OTHER LAND.

PERENNIAL WATER BODIES WITH AN EXTENT OF AT LEAST 40 ACRES.







Total County Area - 582,369 acres Mapped Area - 582,369 acres

Important Farmland Maps are compiled by the Farmland Mapping and Monitoring Program (FMMP) pursuant to Section 65570 of the California Government Code. To create the maps, FMMP combines current land use information with U.S. Department of Agriculture-Natural Resources Conservation Service (NRCS) soil survey data. Soil units qualifying for Prime Farmland and Farmland of Statewide Importance are determined by the NRCS. Changes to soil profiles subsequent to publication of NRCS soil surveys are not reflected on this map. This map was developed using NRCS digital soil data (SSURGO) and may contain individual soil units as small as one acre.

Land use status is determined using current and historic aerial imagery, supplemental GIS data, and field verification. Imagery sources may include public domain datasets, web-based information, and commercially purchased data, depending on data availability. Supplemental data on land management status is obtained from federal, state, and local governments. Map reviewers at the local level contribute valuable information with their comments and suggestions. Please refer to FMMP field analyst reports for each county to obtain specific citations.

Cultural base information for the Important Farmland Maps was derived from public domain data sets, based upon design of the U.S. Geological Survey, with updates generated by digitizing over current imagery.

This map should be used within the limits of its purpose - as a current inventory of agricultural land resources. This map does not necessarily reflect general plan or zoning designations, city limit lines, changing economic or market conditions, or other factors which may be taken into consideration when land use policies are determined. This map is not designed for parcel-specific planning purposes due to its scale and the ten-acre minimum land use mapping unit. Classification of important farmland and urban areas on this map is based on best available data. The information has been delineated as accurately as possible at 1:24,000-scale, but no claim to meet 1:24,000 National Map Accuracy Standards is made due to variations in the quality of source data.

The Department of Conservation makes no warranties as to the suitability of this product for any particular purpose.

Additional data is available at www.conservation.ca.gov/dlrp/fmmp, including detail on the program, full size PDF maps, map categories, statistics, field summaries, and GIS data for download. Contact the:



Farmland Mapping and Monitoring Program 801 K Street, MS 18-01 Sacramento, CA 95814 Phone: (916) 324-0850

e-mail: fmmp@conservation.ca.gov

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Memorandum

APPENDIX B

FEMA 100-Year Floodplain Nishi Development Map

