B. Storm Drains

Below is a summary of the planned storm drains as described in *Water Quality Technical Report and Hydromodification Management Plan for the University Park and Innovation District* dated September 17, 2015 prepared by Rick Engineering Company.

Main Campus Property

For the Main Campus Property, run-off from Basins 100 and 200 will be conveyed in the southerly direction via a network of the on-site proposed storm drain systems, which will connect to the proposed storm drain system that is part of the future Village 10 development and directly discharge into Otay River. Run-off from Basins 300, 400, 500, 600, and 700 will be conveyed in a southwesterly direction via a network of on-site proposed storm drain systems and a proposed storm drain system through an off-site easement that will outlet into a proposed storm water management feature (i.e. – bioretention basin) located northwest of the confluence of Salt Creek and Otay River and discharge directly into Otay River.

Lake Property

For the Lake Property, run-off from Basins 1000, 1100, and 1200 will be conveyed in an easterly direction via a network of on-site proposed storm drain systems towards the proposed storm water management features (i.e. – bioretention basins) for Basins 1100 and 1200 (except Basin 1000 will be a self-treating area) and outlet into Lower Otay Reservoir via three proposed culvert crossings in the future that will replace the three existing culvert crossings beneath Wueste Road.

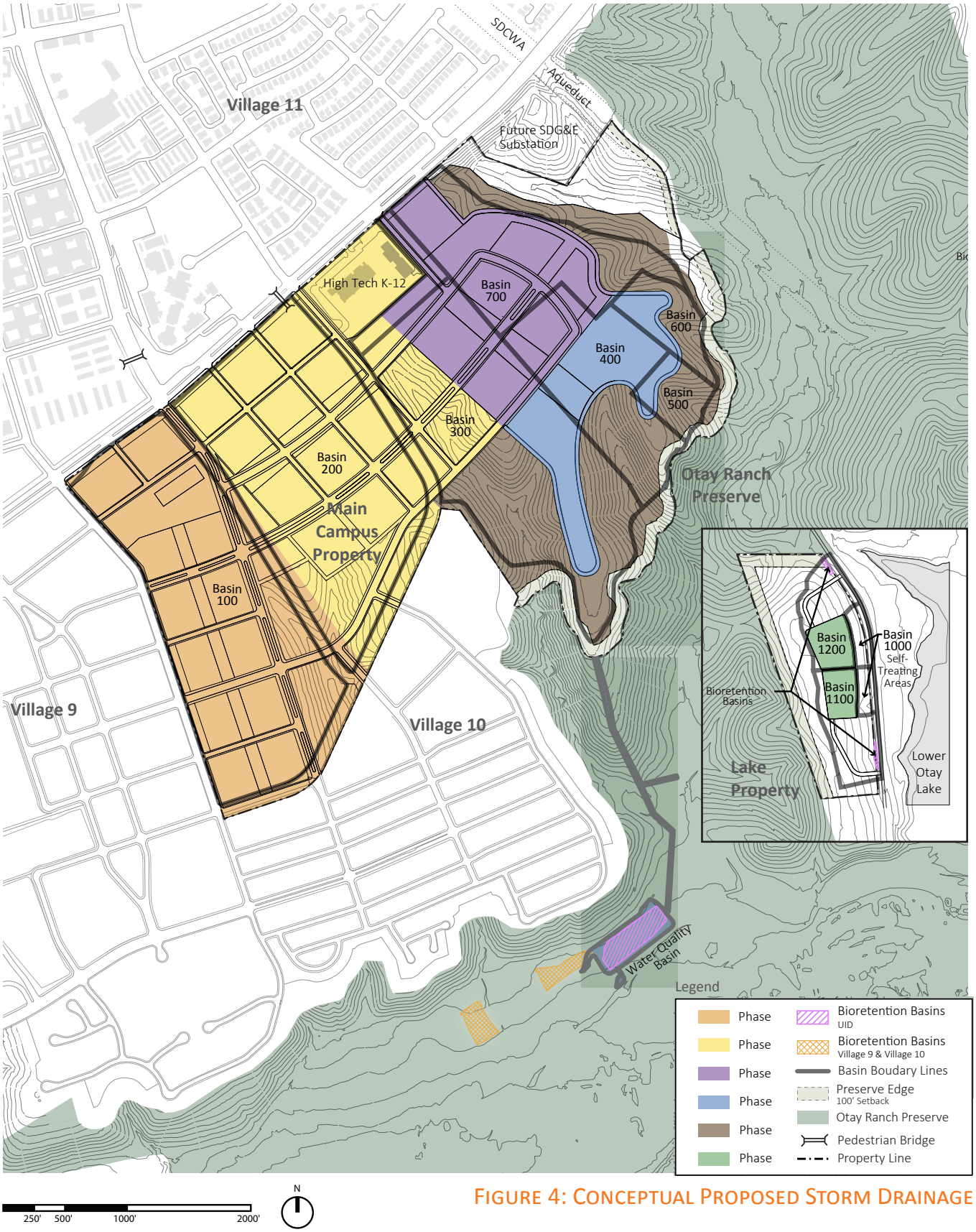


Figure 4: Conceptual Proposed Storm Drainage

C. Access Road/Trail

Access to the off-site facilities listed above will be provided by an existing access road that extends from the existing access road for the Salt Creek Interceptor. The existing access road will require minor improvements to accommodate widths of up to 20 feet. This sewer access road will allow a connection to the Chula Vista Greenbelt Trail/Otay Valley Regional Park Trail as designated in the Chula Vista General Plan, the Chula Vista MSCP Subarea Plan, the Chula Vista Greenbelt Master Plan and the Otay Valley Regional Park Concept Plan. This trail is located within the existing Salt Creek Sewer Easement south of the UI District. Per the MSCP Subarea Plan, trails designated in the OVRP Concept Plan are "Planned Facilities," subject to MSCP Subarea Plan § 7.5 and 7.6.3. Proposed trail improvements within the existing Salt Creek Sewer Easement include post and rail fencing and signage per the Chula Vista Greenbelt Master Plan and the Otay Valley Regional Park Trails Plan. Physical implementation of this trail facility would not create any additional impacts on the MSCP Preserve. Refer to the *Biological Report* dated November 18, 2014 prepared by HELIX Environmental Planning Inc. for the MSCP adjacency analysis.

D. Rural Trail

The UI District designates an existing 8-foot wide dirt road within the Preserve as a link between the trails within the UI District and the Greenbelt Trail. This linkage has been identified pursuant to the MSCP Subarea Plan that establishes "*Priority 1 3. Locate trails, view overlooks, and staging areas in the least sensitive areas of the Preserve. Locate trails along the edges of urban land uses adjacent to the Preserve, or the seam between land uses and follow existing dirt roads as much as possible…"* [emphasis added] (See Figures 6: Trail Sections). Pursuant to the Chula Vista Greenbelt Master Plan Trail Standards (Table 1), the existing native soil surface treatment on the existing dirt road will ultimately meet the Rural Trail standards. Proposed trail improvements include post and rail fencing and trail signage. Wire fencing and signage, may be provided along the trail where adjacent to native or sensitive habitat. Erosion control measures may be implemented within the disturbed area, where appropriate. The Rural Trail is subject to MSCP siting criteria.

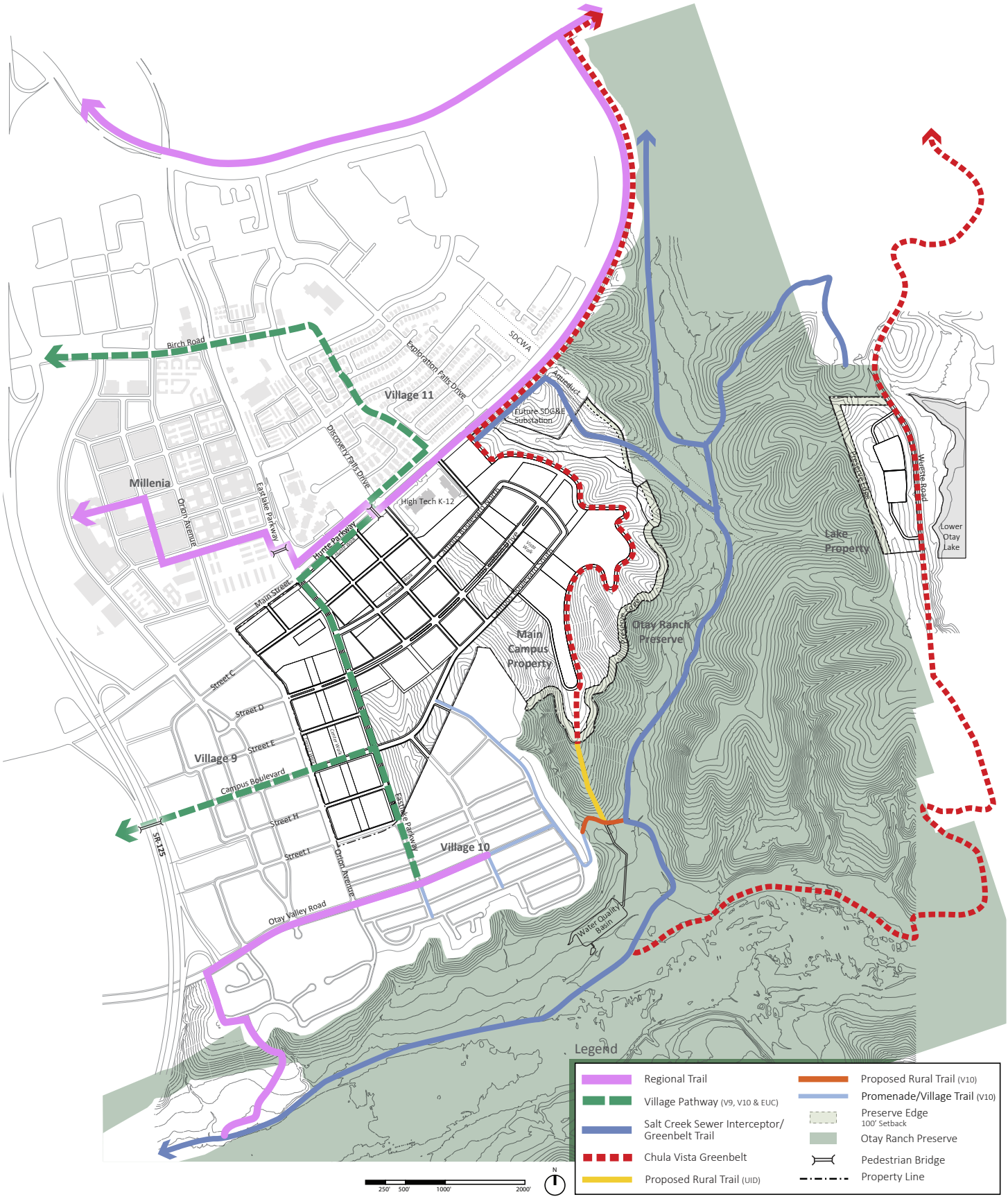
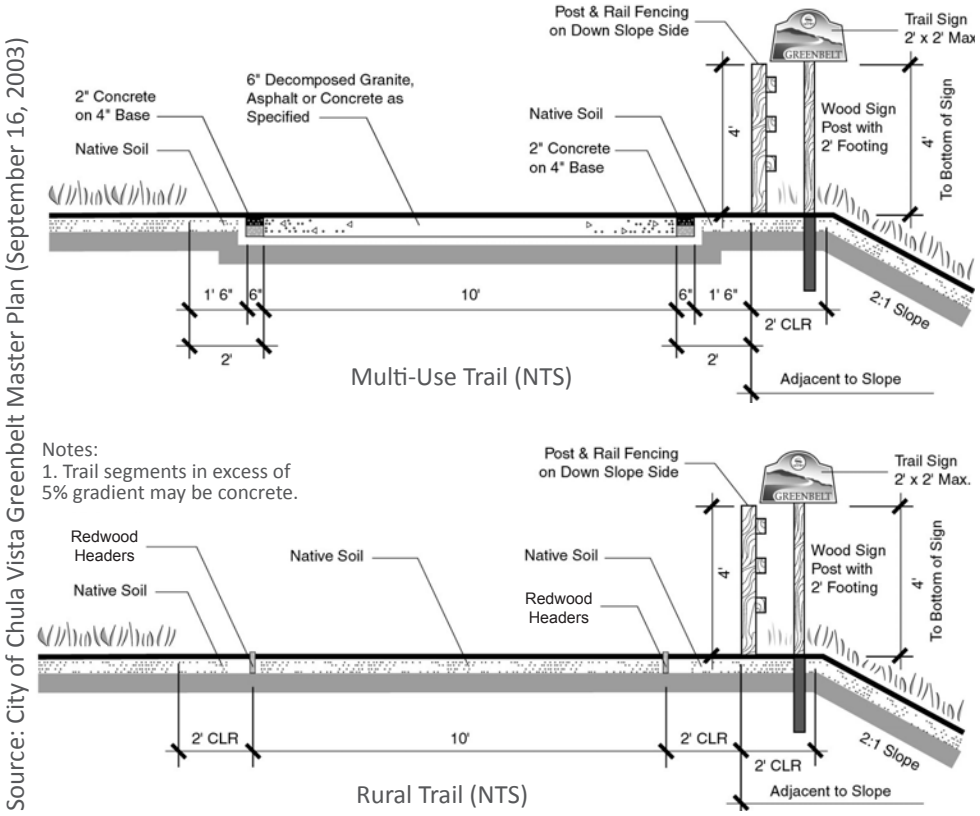


Figure 5: UI District Trails Plan



Source: City of Chula Vista Greenbelt Master Plan (September 16, 2003)

FIGURES 6: TRAIL SECTIONS

3. Facilities Proposed within the 100-Foot Wide Preserve Edge

No structures other than fencing shall be allowed within 100-foot wide Preserve Edge as depicted in Figure 1: Areas Subject to the Preserve Edge Plan and Facilities Proposed in the Preserve. Perimeter fences within the 100-foot wide Preserve Edge shall be built and landscaped to minimize visual impacts on the Preserve and the Otay Valley Regional Park. Landscape plans for areas adjacent to the MSCP Preserve must be consistent with Appendices E and F of the FPP (Appendix F) and the Preserve Edge Plan landscaping and irrigation requirements. Any proposed fence or storm drain within the Preserve Edge shall be subject to review and approval of the Deputy City Manager/Development Services Director.

A. Storm Drain Systems

Water will be conveyed through the Preserve Edge to the proposed storm water described earlier in Section 2. Facilities & Improvements Proposed within the Preserve. These storm drain systems will follow the guidelines set forth in the Chula Vista BMP Design Manual, dated December 2015.

4. Compliance with RMP/MSCP Subarea Plan Policies

The following discussion provides a description of policies identified in the Chula Vista MSCP Subarea Plan, the RMP, as well as compliance measures to be carried out by the various components of the SPA Plan.

A. Drainage

MSCP Policy

"All developed and paved areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the Preserve. This can be accomplished using a variety of methods including natural detention basins, grass swales or mechanical trapping devices. These systems should be maintained approximately once a year, or as often as needed, to ensure proper functioning. Maintenance should include dredging out sediments if needed, removing exotic plant materials, and adding chemical-neutralizing compounds (e.g., clay compounds) when necessary and appropriate." (Page 7-25)

Compliance

The Drainage Study For University Park and Innovation District and the *Water Quality Technical Report and Hydromodification Management Plan for University Park and Innovation District* dated September 17, 2015, and prepared by Rick Engineering Company assessed the existing and developed drainage and water quality conditions in the SPA Plan. In conformance with the GDP and SPA requirements, these reports provide the necessary hydrological studies, analysis and design solutions to provide appropriate urban runoff and water quality for the UI District. Key elements of the Drainage Plan and Water Quality Plan are described below and depicted on Figure 4: Conceptual Proposed Storm Drainage.

All pre-development and post-development runoff from UI District is within the Otay River Valley watershed. Runoff from UI District is conveyed via a public storm drain system, treated within the water quality (bioretention) basins located within the Preserve south of Village 10 and outlets directly into the Otay River. Bioretention basin regular maintenance activities are anticipated four times a year (February, May, September and December). Rainy season (February and December) and pre-rainy season (September) maintenance activities include removal of trash, debris and excess sediment, clear clogged riser orifices and perform basin area repairs. Post-rainy season maintenance

includes full silt removal from the dry weather storage area, vegetation removal, annual inspections by a registered civil engineer, removal of trash, debris and excess sediment above the dry weather zone, clear clogged riser orifices and perform basin area repairs. Additional maintenance may be required following major rainfall events unless the next regularly scheduled maintenance dates are within one month of the rain event. Access to the bioretention basin is provided via the Sewer & Storm Drain Easement.

B. Urban Runoff

The development of the SPA Plan will implement all necessary requirements for water quality as specified by the State and local agencies. The development will meet the requirements of the City's Standard Urban Storm Water Mitigation Plan (SUSMP), the Jurisdictional Urban Runoff Management Plan and the Storm Water Management and Discharge Ordinance (as specified in the City of Chula Vista Development and Redevelopment Storm Water Management Standards/Requirements Manual).

For the Main Campus Property, a total of three bioretention basins are proposed including two bioretention basins to be constructed as part of the adjacent Village 10 that will treat the Orange and Yellow Phases, one large bioretention basin that will treat Purple, Blue and Brown Phases. Flows from the Main Campus Property will outlet directly to the Otay River.

The Otay River is a USGS blue line stream, which makes it a waterway of the United States under the Clean Water Act (CWA). All development in excess of five acres must incorporate urban run-off planning, which will be detailed at the Tentative Tract Map level. The conceptual grading and storm water control plan for the SPA Plan provides for water quality control facilities to ensure protection for the Otay River. At this time it is unknown if the Otay River will remain an exempt receiving water for Hydromodification Management Plan purposes. Development will meet the requirements at the time of application for permit.

The Lower Otay Reservoir is a drinking water reservoir owned and operated by the City of San Diego Water Department. To protect reservoirs, the City of San Diego Water Department prepared a document titled, *Source Water Protection Guidelines for New Developments*, dated January 2004, to guide future activities within the San Diego County watersheds which drain into drinking water reservoirs.

For the Lake Property, BMPs ensure a high level of treatment for storm water runoff in order to protect Lower Otay Reservoir with a total of two proposed bioretention basins designed to treat storm water runoff before it enters the Lower Otay Reservoir.

In addition to the permanent drainage facilities, temporary desiltation basins to control construction related water quality impacts will be constructed within the SPA Plan with each grading phase to control sedimentation during construction. The interim desiltation basins will be designed to prevent discharge of sediment from the project grading operations into the natural drainage channel and will be detailed in the Storm Water Pollution Prevention Plans (SWPPP) as required by the Construction General Permit from the State Water Resources Control Board. The exact size, location and component elements of these interim basins would be identified on the grading plans and SWPPP. Temporary, interim measures will occur within the development area.

C. Toxic Substances

MSCP Policy

"All agricultural uses, including animal-keeping activities, and recreational uses that use chemicals or general by-products such as manure, potentially toxic or impactive to wildlife, sensitive species, habitat, or water quality need to incorporate methods on their site to reduce impacts caused by the application and/or drainage of such materials into the Preserve. Methods shall be consistent with requirements requested by the Regional Water Quality Control Board (RWQCB) and National Pollution Discharge Elimination System Permit (NPDES)." (Page 7-26)

Compliance

There are no agricultural activities currently occurring on the site. The SPA Plan phases out agricultural uses adjacent to the Preserve, consistent with the SPA Plan Agricultural Plan. However, University-related crop production (research and small-scale production) activities may be allowed with the following requirements:

- Use of pesticides shall comply with federal, state and local regulations.
- In those areas where pesticides are to be applied, vegetation shall be utilized to shield adjacent urban development (within 400 feet) from agricultural activities.
- The applicant shall notify adjacent property owners of potential pesticide application through advertisements in newspapers of general circulation.
- Where necessary to ensure the safety of area residents, appropriate fencing shall be utilized.

As described in greater detail in the Storm Water Quality Management Plans (SWQMP) for UI District, prepared by Rick Engineering, the combination of proposed construction and permanent BMPs will reduce, to the maximum extent practicable, the expected project pollutants and will not adversely impact the beneficial uses of the receiving waters.

Anticipated pollutants from the project site may include sediments, nutrients, heavy metals, organic compounds, trash and debris, oxygen demanding substances, oil and grease, bacteria and viruses and pesticides. Runoff from the UI District will be transmitted via public storm drain to water quality basins located south of Village 10. Storm Water pollutants are removed through physical and biological processes, including adsorption, filtration, plant uptake, microbial activity, decomposition, sedimentation and volatilization (EPA 1999). Adsorption is the process whereby particulate pollutants attach to soil (e.g., clay) or vegetation surfaces. Pollutants removed by adsorption include metals, phosphorus, and hydrocarbons. Filtration occurs as runoff passes through the bioretention area media, such as the sand bed, ground cover, and planting soil. Treated water is released into the Otay River within 72 hours of capture. This system ensures that, to the greatest extent practicable, Preserve areas adjacent to the UI District will not be impacted from toxic substances that may be generated from the UI District project site.

D. Lighting

MSCP Policy

"Lighting of all developed areas adjacent to the Preserve should be directed away from the Preserve, wherever feasible and consistent with public safety. Where necessary, development should provide adequate shielding with non¬invasive plant materials (preferably native), berming, and/or other methods to protect the Preserve and sensitive species from night lighting. Consideration should be given to the use of low-pressure sodium lighting." (Page 7-26)

Compliance

The UI District Design Plan includes criteria for the design of lighting for the District, including the 100-foot wide Preserve Edge. Improvement plans for the areas within the 100-foot wide Preserve Edge will include shielded lighting designs that avoid spillover light in the Preserve. Lighting Plans and a photometric analysis shall be prepared to illustrate the location of proposed lighting standards and type of shielding measures.

Lighting Plans and accompanying photometric analyses must be prepared in conjunction with improvement plans for any improvements within the 100-foot wide Preserve Edge to identify the location of proposed lighting fixtures and the type of light shielding measures. The Lighting Plan must demonstrate that light spillage into the Preserve is avoided to the greatest extent possible. City of Chula Vista updated street lighting standards require installation of energy saving LED lamps on all City streets.

E. Noise

MSCP Policy

"Uses in or adjacent to the Preserve should be designed to minimize noise impacts. Berms or walls should be constructed adjacent to commercial areas and any other use that may introduce noises that could impact or interfere with wildlife utilization of the Preserve. Excessively noisy uses or activities adjacent to breeding areas, including temporary grading activities, must incorporate noise reduction measures or be curtailed during the breeding season of sensitive bird species."

Where noise associated with clearing, grading or grubbing will negatively impact an occupied nest for the least Bell's vireo during the breeding season from March 15 to September 15, noise levels should not exceed 60 CNEL. However, on a case by case basis, if warranted, a more restrictive standard may be used. If an occupied Least Bell's Vireo nest is identified in a pre-construction survey, noise reduction techniques, such as temporary noise walls or berms, shall be incorporated into the construction plans to reduce noise levels below 60 CNEL.

Where noise associated with clearing, grubbing or grading will negatively impact, an occupied nest for raptors between January 15 to July 31 or the California gnatcatcher between February 15 and August 15 (during the breeding season), clearing, grubbing or grading activities will be modified if necessary, to prevent noise from negatively impacting the breeding success of the pair. If an occupied raptor or California gnatcatcher nest is identified in a pre-construction survey, noise reduction techniques shall be incorporated into the construction plans. Outside the bird breeding season(s) no restrictions shall be placed on temporary construction, noise." (Page 7-26)

Compliance

The project includes Mitigation Measures requiring pre-grading surveys for gnatcatchers, vireos and nesting raptors. Based on those surveys and locations of nesting birds in the year of grading, if it is determined that the noise impact thresholds established in the Chula Vista MSCP Subarea Plan would be exceeded, the applicant would be required to reduce the impact below the designated threshold through either modification of construction activities (such as berming) or avoiding clearing, grubbing, grading or construction activities within 300 feet of an occupied nest site.

In addition, the UI District land uses within the 100-foot wide Preserve Edge are low noise generating uses, comprised of landscaping and a trail connection.

F. Invasives

MSCP Policy

"*No invasive non-native plant species shall be introduced into areas immediately adjacent to the Preserve. All slopes immediately adjacent to the Preserve should be planted with native species that reflect the adjacent native habitat. The plant list contained in the "Wildland / Urban Interface: Fuel Modification Standards," and provided as Appendix L of the Subarea Plan, must be reviewed and utilized to the maximum extent practicable when developing landscaping plans in areas adjacent to the Preserve*." (Page 7-27)

Compliance

Landscape plans adjacent to the Preserve will not contain any invasive species, as determined by the City of Chula Vista and identified in the MSCP Subarea Plan, Appendices N, List of Invasive Species. Landscape areas within the 100-foot wide Preserve Edge must comply with the Approved Plant List provided as Attachment "A" to this document. Any changes to the Approved Plant List must be approved by the Development Services Director or the Director's designee. The area may be planted with container stock (liners) or a hydroseed mix.

G. Buffers

MSCP Policy

"*There shall be no requirements for buffers outside the Preserve, except as may be required for wetlands pursuant to Federal and/or State permits, or by local agency CEQA mitigation conditions. All open space requirements for the Preserve shall be incorporated into the Preserve. Fuel modification zones must be consistent with § 7.4.4 of the Subarea Plan.*"

Compliance - Brush Management Zones

Brush Management zones have been incorporated into the proposed development areas of the SPA Plan pursuant to the requirements of the Subarea Plan. Where appropriate, graded landscaped slope areas will be maintained pursuant to Fire Department requirements and will be outside of the Preserve. The UI District FFP provides specific fuel modification requirements for the entire SPA. Consistent with the Chula Vista MSCP requirements, a 150-foot Brush Management Zone has been established that extends from the Preserve Edge boundary inward over the entire Preserve Edge and an additional 50 feet.

5. Compliance with Otay Ranch GDP

Objective: *Identify allowable uses within appropriate land use designations for areas adjacent to the Preserve.*

Policy: *All development plans adjacent to the edge of the Preserve shall be subject to review and comment by the Preserve Owner/Manager, the City of Chula Vista, and the County of San Diego to assure consistency with resource protection objectives and policies.*

Policy: *"Edge Plans" shall be developed for all SPAs that contain areas adjacent to the Preserve. The "edge" of the Preserve is a strip of land 100 feet wide that surrounds the perimeter of the Preserve. It is not a part of the Preserve, it is a privately or publicly owned area included in lots within the urban portion of Otay Ranch immediately adjacent to the Preserve.*

Compliance

The preparation of this UI District Preserve Edge Plan fulfills the requirement to develop an "Edge Plan" for any SPA Plan adjacent to the Preserve and is subject to review and comment by the Preserve Owner/Manager, City of Chula Vista and County of San Diego. Uses within the 100-foot wide Preserve Edge are either privately or publicly owned and maintained. Only the uses discussed in Section 3. Facilities within the 100-foot wide Preserve Edge are proposed within and adjacent to the buffer.

A. MSCP Adjacency Guidelines

All new development must adhere to the Adjacency Guidelines for drainage found on Page 7-25 of the Subarea Plan. In summary, the guidelines state that:

1. *All developed areas must prevent the release of toxins, chemicals, petroleum products, exotic plant materials and other elements that might degrade or harm the natural environment or ecosystem processes within the Preserve.*
2. *Develop and implement urban runoff and drainage plans which will create the least impact practicable for all development adjacent to the Preserve.*
3. *All development located within or directly adjacent to or discharging directly to an environmentally sensitive area are required to implement site design, source control, and treatment control Best Management Practices (BMPs).*

Compliance

To adhere to these MSCP guidelines, excessive runoff into the Otay Ranch Preserve from adjacent irrigated slopes must be prevented. Erosion control BMPs must be installed prior to planting and watering to prevent siltation into the Preserve. The irrigation system installed on any adjacent slopes shall have an automatic shutoff valve to prevent erosion in the event the pipes break. Irrigation schedules for the slopes adjacent to the Preserve must be evaluated and tested in the field to determine the appropriate water duration and adjusted, as necessary, to prevent excessive runoff.

Detailed irrigation plans will be prepared in conjunction with any slope improvement plans. In addition, a manual weeding program or the focused application of glyphosate shall be implemented on any manufactured slopes adjacent to the Preserve to control weeds that are likely to be encouraged by irrigation. Weed control efforts should occur quarterly or as needed, to prevent weeds on the manufactured slopes from moving into the adjacent Preserve. A qualified monitor shall check the irrigated slopes during plant establishment to verify that excessive runoff does not occur and that any weed infestations are controlled.

B. Restrict Access

Both the Otay Ranch RMP and Chula Vista MSCP Subarea Plan contain policies that restrict or limit access into the Preserve. These policies are discussed below:

Otay Ranch RMP Policy 6.5

"*Identify restricted use areas within the Preserve.*"

Standard: *Public access may be restricted within and adjacent to wetlands, vernal pools, restoration areas, and sensitive wildlife habitat (e.g., during breeding season) at the discretion of the Preserve Owner/Manager.*

Guidelines: *1. The Preserve Owner/Manager shall be responsible for identifying and designating restricted areas based on biological sensitivity..."*

MSCP Policy: *"The public access to finger canyons will be limited through subdivision design, fencing or other appropriate barriers, and signage."*

"Install barriers (fencing, rocks/boulders, appropriate vegetation) and/or signage in new communities where necessary to direct public access to appropriate locations."

Compliance

Pursuant to the requirements of the MSCP Subarea Plan and RMP, the land plan has been designed to provide access to the preserve areas at designated locations, directing pedestrians to developed public trails within the Otay River Valley and Salt Creek via designated public trails and roadways. The SPA Plan provides view fencing along the Preserve Edge will be provided outside the Preserve, within the Brush Management Zone and will create a barrier between development and the Preserve. This property will be maintained by the City of Chula Vista, with maintenance funded through an Community Facilities District (CFD) and/or Landscape Maintenance District.

Access to the Brush Management Zone will be provided via locked gates for maintenance and fire protection activities only. The exact location and type of all proposed fencing will be depicted on the overall UI District Landscape Master Plan and will be subject to review and approval by the Development Service Director. Signage, identifying the MSCP Preserve and notifying the public of access restrictions, will be provided at key locations along the Preserve edge, and Rural Trail Trailhead. A detailed sign program for trails will be provided on the UI District Landscape Master Plan and will be subject to review and approval by the Development Services Director, and the Director of General Services or designee.

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