Article 4.0

PUUBLIC FACILITIES AND SERVICES PLAN

Article 4.0 addresses the required public facilities and services, and utilities necessary to serve the Plan Area. It includes a discussion of the public facilities plan for the Plan Area, and provides a conceptual water distribution, sanitary sewer, and drainage layout illustrating the location of the proposed infrastructure.

4.0

PUBLIC FACILITIES AND SERVICES PLAN

Article 4.0 of the Specific Plan describes the existing infrastructure available to support new development within the Plan Area and the proposed infrastructure program for the Plan Area.

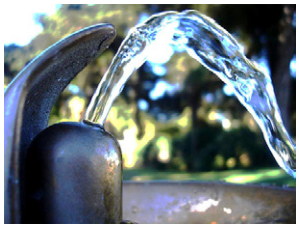
Section 4.1 Public Facilities and Services Goals

- Provide adequate water, wastewater, and storm water infrastructure to serve the Plan Area.
- Protect the quality of surface water and groundwater through the design and implementation of the storm water system.
- Provide adequate public utility and communications infrastructure to serve the Plan Area.
- Ensure public safety by off-setting the capital costs associated with additional demands created by development within the Plan Area.
- Provide adequate park facilities within the Plan Area to serve residents and visitors.
- Ensure adequate school facilities by off-setting the capital costs associated with additional demands created by development within the Plan Area.
- Promote and facilitate recycling to minimize additional demands on solid waste disposal services and facilities.

Section 4.2 Public Facilities Plan

Both physical infrastructure and public services would be needed to serve future development within the Plan Area. Physical infrastructure includes potable water supply and distribution; wastewater collection; and storm water collection and disposal. Utility services including electricity, natural gas, telephone service, and cable television are also needed. Public services refer to schools, fire protection, police protection, and solid waste collection and disposal. Facility and services needs and plans are described in this section.

The master developer and/or individual developers will be responsible for designing, financing, and constructing "backbone" water, wastewater, storm water, and utility service system capital improvements. Backbone refers to the main components of the systems that are built throughout the Plan Area to which individual project infrastructure systems would connect. The backbone infrastructure components are identified in the infrastructure plans discussed below. The location, design and operation of all water and wastewater facilities will conform to California statutory requirements as prescribed by the applicable regulatory agencies. Individual project developers would install infrastructure within the boundaries of the projects they construct. Please refer to the preliminary capital improvements program in Article 5.0, Plan Implementation, for a list of anticipated backbone infrastructure and utility improvements, costs, and implementation responsibilities.

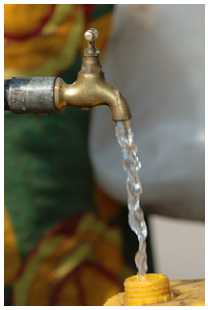


Information in this section is derived primarily from the *Preliminary Engineer's Report for Walnut Avenue Specific Plan* (RJA 2012). Note that plans could change depending on the specific needs of future development. The complete Engineer's Report is included in the Specific Plan as Appendix E.

Domestic Water Supply

Water Supply and Demand

The Monterey County Water Resources Agency manages the groundwater basin that the City uses for water supply. The City receives all of its raw water supply from the Lower Aquifer sub-basin in the Salinas River Basin. The City has seven wells which extract groundwater from the sub-basin to the City's storage tanks. The City's water system is pressurized by variable frequency drive pumps that maintain pressures during demand fluctuations. Currently there are three water mains that cross U.S. Highway 101 and serve the eastern portion of the City. Per discussions with the City's Engineering staff, it is believed that adequate water supply, storage, and pumping infrastructure is in place to serve the future development of the Plan Area.



At full build-out, development within the Plan Area is expected to generate an Average Daily Water Demand of approximately 181,090 gallons per day (gpd), and a Maximum Daily Demand of 312,370 gpd based on the preliminary land use assumptions. Table 9, Projected Water Demand, summarizes the projected water demand for the Plan Area by land use.

Domestic Water Distribution Infrastructure

Existing domestic water infrastructure is available within the streets adjacent to the Plan Area. There is an existing 12-inch water line in 3rd Street that runs from the intersection of 3rd Street and Apple Avenue to approximately 400 feet north of Walnut Avenue. Another 12-inch line runs east-west on Apple Avenue, crosses U.S. Highway 101 and runs directly to one of the City's wells. A 12-inch line, which was constructed as part of the Walnut Avenue widening improvements, exists in Walnut Avenue starting at 3rd Street and running approximately 560 feet west. The City plans to extend a 12-inch main in Walnut Avenue, which is slated for construction with the Walnut Avenue/U.S. Highway 101 Interchange improvement project. This 12-inch main would add redundancy to the existing system.

Table 9 Projected Water Demand

Land Use	Approximate Total Acreage	Residential Units Primary	Average Daily Demand (gpd)
Residential (High-Density)	7.8	220	118,800
Commercial (Highway)	33.9	-	37,390
Right-of-Way	10.3	-	-
Open Space/Parks/Ponds	10.6	-	24,900
Total	**62.6**	**220**	**181,090**
		Maximum Daily Demand =	312,370 gpd
		Peak Hour Demand =	451 gpm
		Average Yearly Demand =	203 acre-feet/year

Source: Ruggeri-Jensen-Azar 2012

Notes: Water demand assumptions are taken from the City of Salinas standards and Greenfield 2005 General Plan

The Maximum Daily Demand (MDD) and Peak Hour Demand (PHD) factors are taken from the City of Salinas 2008 standards.

Landscape Demand Calculation method based on California Dept. of Water Resources published Model Landscape Ordinance.

Approximate acreage based on conceptual land use plan.

The backbone water distribution system for the Plan Area will consist of eight-inch water lines that will loop and tie into the existing infrastructure. As shown in Figure 14, Conceptual Water Distribution & Sanitary Sewer Layout, backbone infrastructure will be constructed within the proposed backbone road rights-of-way, and will be stubbed at each developable area within the Plan Area. The backbone water system would be maintained by the City.

Pressure tests should be performed at each phase of development to identify the water infrastructure needed to support that phase. The infrastructure needed to support each phase of development will need to be verified as development design proceeds. Refer to Article 5.0, Plan Implementation for phasing and development schedule details.

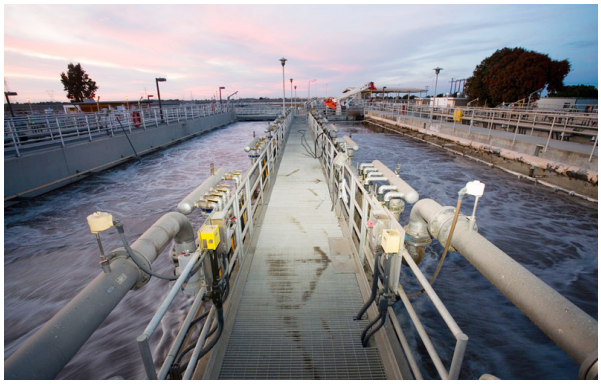
Water Conservation

Water supplies are limited throughout much of the state, with supply potentially exceeding long term needs. The City overlies, and obtains its water supply from, the Salinas Valley Groundwater Basin. Although regional recharge projects have been implemented to ensure safe pumping from this aquifer, water is a limited resource, and conservation is an important part of any strategy to protect that resource for future generations.

Wastewater

Wastewater Generation and Treatment

The City operates the Greenfield Wastewater Treatment plant that is located at the eastern terminus of Walnut Avenue. The City received approval from the Central Coast Regional Water



Quality Control Board (CCRWQCB) to increase the wastewater treatment plant capacity to 2.0 million gallons per day (mgd) as part of a three-phase expansion project (Phases I and II have been completed). From discussions with the City Engineer, it is believed that the plant currently receives 1.0-1.2 mgd. The wastewater treatment plant should have sufficient capacity to provide adequate treatment and disposal of wastewater generated by development of the Plan Area.

At full build-out, development within the Plan Area is projected to generate an Average Dry Weather Flow of approximately 80,020 gallons per day (gpd) based on the preliminary land use assumptions in Table 10, Projected Sewage Generation. The peak flow rate is estimated at 0.36 cubic feet per second.

Wastewater Collection Infrastructure

The City owns and maintains sewer infrastructure that is located adjacent to the Plan Area, within adjacent streets. The City's collection system consists of approximately 108,000 feet of gravity sewer pipes ranging from 6 to 24-inches in diameter. Existing sewer mains adjacent to the Plan Area include a 24-inch line in Walnut Avenue (from 3rd Street east to the wastewater treatment plant), a 21-inch line in 3rd Street, and an eight-inch line stubbed in Walnut Avenue (west of 3rd Street).

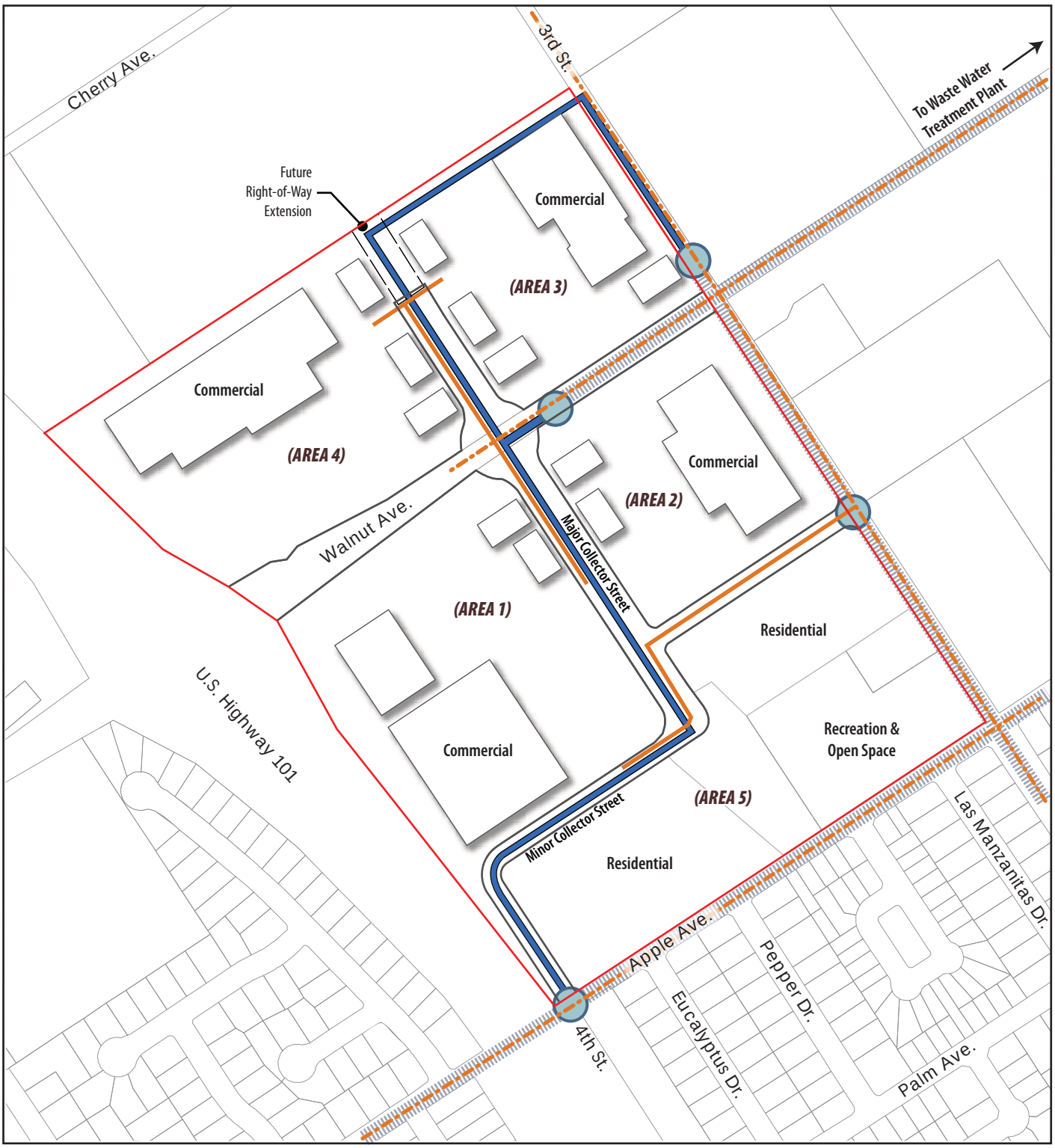
Plan Area wastewater will be conveyed in new eight-inch backbone gravity sewer mains that will tie into the City's existing eight-inch main currently stubbed in Walnut Avenue, and into the existing 21-inch main in 3rd Street. Wastewater will then be conveyed through the City's 24-inch trunk main, which flows under Walnut Avenue to the wastewater treatment plant east of the Plan Area. Figure 14, Conceptual Water Distribution & Sanitary Sewer Layout, illustrates the general

Table 10 Projected Sewage Generation

Land Use	Approximate Total Acreage	Residential Units Primary	Average Day Dry Weather Flow (gpd)
Residential (High-Density)	7.8	220	66,000
Commercial (Highway)	33.9	-	14,020
Right-of-Way	10.3	-	-
Open Space/Parks/Ponds	10.6	-	TBD
Total	**62.6**	**220**	**80,020**

Source: Ruggeri-Jensen-Azar 2012

Notes: Sewage generation, sewer peaking factors, and rainfall dependant inflow and infiltration assumptions are taken from the City of Salinas 2008 Design Standards.



Source: RJA 2012

Figure 14

Conceptual Water Distribution & Sanitary Sewer Layout

Walnut Avenue Specific Plan

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anticipated backbone wastewater collection infrastructure for the Plan Area. The backbone mains would be located within backbone street rights-of-way or utility easements.

Storm Water

Existing Storm Drainage

Rainfall currently either percolates into soils within the Plan Area, or in the case of larger rain events, results in runoff. Run-off to Walnut Avenue and 3rd Street is collected in 18 to 24-inch pipes beneath these streets and discharged to the percolation/detention basin located in the southeast corner of the Plan Area. There are no defined creeks or channels on or adjacent to the Plan Area, and all current runoff flow is surface sheet flow.

The percolation/detention basin located along 3rd Street, between Walnut Avenue and Apple Avenue, was designed and constructed with the Walnut Avenue widening project. The basin has a surface area of 27,500 square feet, capacity of five acre-feet, and a design percolation rate of two inches per hour, consistent with the City's standard engineering design requirement for percolation basins in effect at the time it was designed.

Post-Development Storm Water Management Infrastructure

A preliminary grading design has been prepared for the Plan Area, in which the Plan Area is divided into two drainage areas. This mimics existing watershed boundaries to the maximum extent practicable, with approximately 22.1-acres drainage north of Walnut Avenue, and 40.5-acres drainage south of Walnut Avenue. The north area includes Areas 3 and 4 and the south area includes Areas 1, 2, and 5 of the Plan Area. Due to the highly pervious soils underlying the Plan Area, the design of the conceptual storm water drainage takes into consideration the natural properties of the existing soils to reduce the runoff from the Plan Area and to enable significant ground water recharge. All streets and parking lots within the Plan Area will be graded to direct runoff to storm water percolation areas. These areas will be designed to allow infiltration of storm water with overflow relief to existing overland release points at the eastern boundary of the Plan Area.

The drainage design will direct runoff from impervious surfaces directly to pervious areas, such as landscape medians and drainage swales, for storm water treatment and ultimately percolation. Where the available landscape areas may not be sufficient to percolate the runoff, other methods, such as subsurface disposal (perforated pipe, or open bottom storage chambers), may be used. Because of this innovative approach to storm water collection and disposal, the commercial areas within the Plan Area boundaries are not planned to include backbone infrastructure to collect storm drainage and transport it to the detention/percolation basin.

The existing detention/percolation basin within the Plan Area will be consolidated (decreased in size) to 15,600 square feet in surface area and 1.5

acre-feet in volume, and altered to allow for higher percolation rates, which will better serve future development. The existing detention/percolation basin relative to the proposed consolidated basin is shown in Figure 15, Conceptual Storm Water Drainage Layout. This consolidated basin will continue to operate as a storm water catch basin and capture storm water runoff, which has not already been captured in a pre-designed pervious area, from Areas 1, 2, and 5 of the Plan Area. Water that is captured by the basin will percolate into the soil for groundwater recharge.

The relatively high-density of the residential component, and its location relative to the existing detention/percolation basin, make it a more practical candidate for traditional storm water collection, conveyance and disposal methods. Therefore, the residential land use within the Plan Area will include traditional storm water collection systems that will convey runoff to the existing pond.

All streets and parking lots will be graded to direct runoff to storm water retention/percolation areas. These areas should be designed to allow infiltration of storm water with overflow relief to existing overland release points at the eastern boundary of the Plan Area.

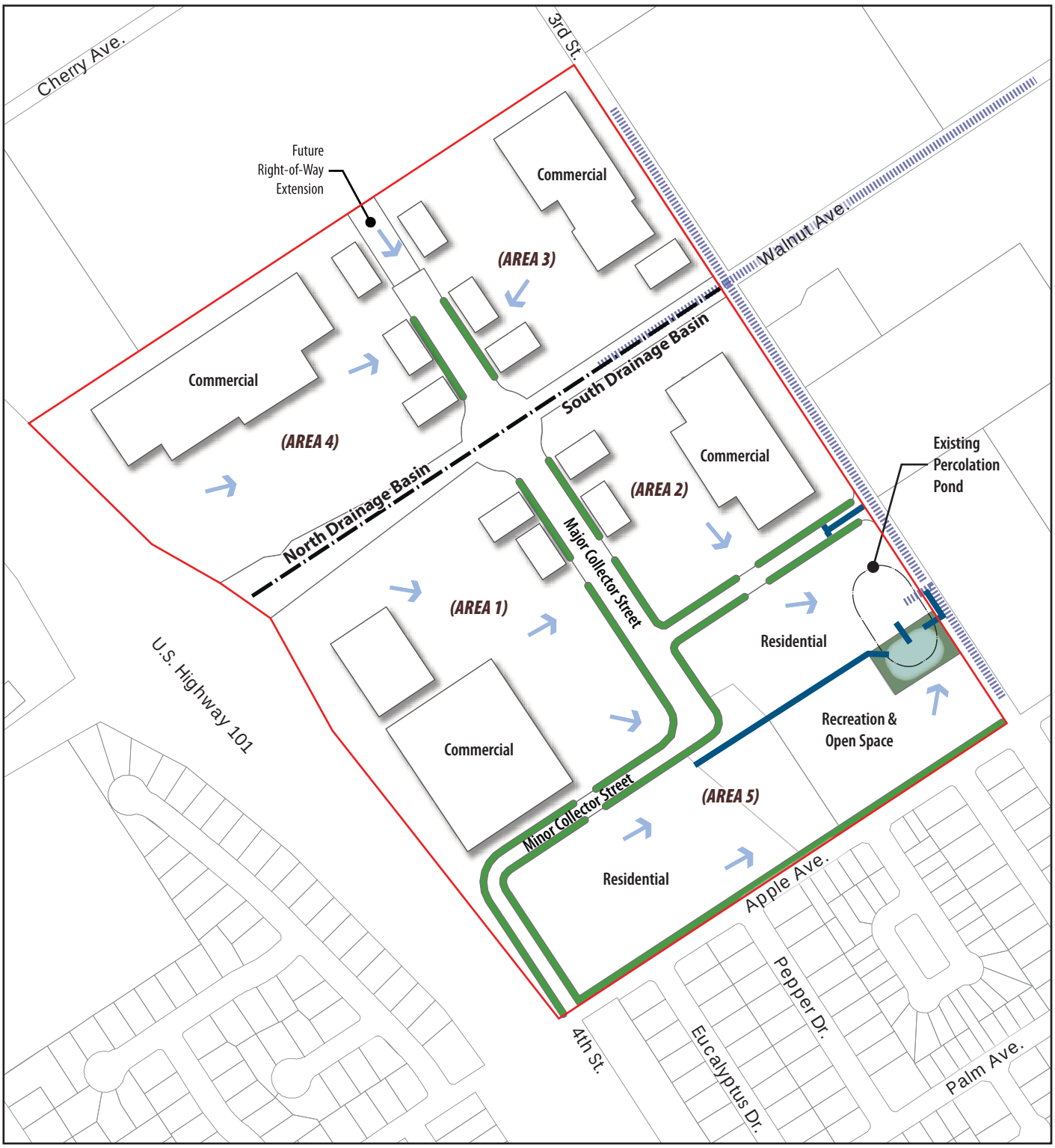
Storm Water Quality and Low Impact Development

Storm water from the developed portions of the Plan Area will contain pollutants that include sediment, nutrients, bacteria, oil and grease, heavy metals, and debris. In addition to City standards for retaining and disposing of storm water, storm water discharges are regulated under the Federal Clean Water Act through the National Pollutant Discharge Elimination System (NPDES). The NPDES program describes how storm water discharges are to be managed to reduce water pollution. Prior to Plan Area construction, landowners/developers must obtain a permit. Use of storm water retention/detention facilities is a key best management practice. Retention/detention facilities facilitate settling of pollutants and decomposition of organic materials prior to storm water being percolated.

The conceptual storm drainage system will be designed to reduce pollutant discharges and lower the construction and post-development storm water runoff volume by implementing Low Impact Development (LID) and Best Management Practices (BMP) planning and design strategies. Development of the Plan Area will seek to mimic the site's pre-development hydrologic features through the following practices:

- Incorporating significant landscaped areas into the overall design of the Plan Area;
- Maintaining existing watershed drainage areas to the maximum extent practicable;
- Maintaining surface flow through the use of roadside vegetated swales, which will in turn slow runoff and increase time of concentration (refer to Figure 9, Circulation Plan, in Article 3.0); and
- Locating storm water infiltration areas with good soil percolation ability to promote infiltration and runoff.

Low Impact Development (LID) is an innovative storm water management approach, with a basic principle that is modeled after nature: manage rainfall at the source using uniformly distributed decentralized micro-scale controls. LID's goal is to mimic a site's predevelopment hydrology by using



Source: RJA 2012

Figure 15

Conceptual Storm Water Drainage Layout

Walnut Avenue Specific Plan

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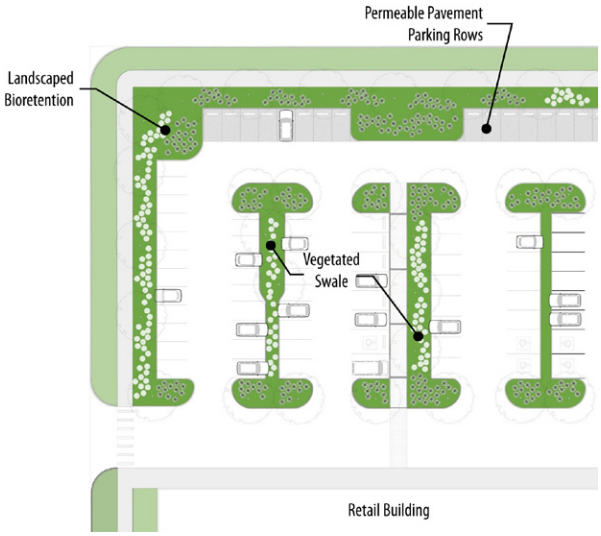
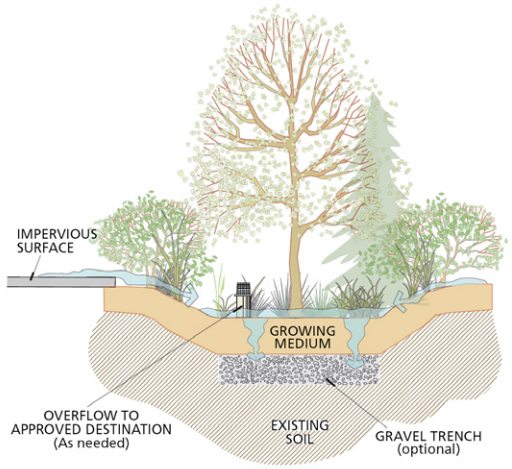
design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Almost all components of the urban environment have the potential for LID, including open space, rooftops, streetscapes, parking lots, sidewalks, and medians. Implementing integrated LID practices can result in enhanced environmental performance, while at the same time reducing development costs when compared to traditional storm water management approaches. A number of these LID techniques and how they can be best incorporated into the Plan Area design are described below.



Bioretention functions as a soil and plant-based filtration device that removes pollutants through a variety of physical, biological, and chemical treatment processes. Bioretention includes plantings in low-lying areas/gardens that contain specific layers of soil, sand, and organic mulch. These layers naturally filter runoff, substantially reducing common development pollutants such as lawn fertilizers and roadway oils, and provide protection for receiving waterways. Bioretention can also include rain gardens, which are depressed landscape areas that help to pool and capture water and allow it to percolate.



Bioretention may be incorporated into front yard landscaping, gardens in common areas, and parking lot islands between parking rows. Facilities can also be included in the design of all street components, including curb extensions, medians, roundabouts, and any other landscaped area. (See Article 3.0, Circulation Plan).

Swales are linear, vegetated depressions that capture rainfall and runoff from adjacent surfaces. Swales can reduce off-site street water discharge and remove pollutants along the way. In a swale, water is slowed by traveling through vegetation on a relatively flat grade. Swales can easily be located adjacent to roadways, sidewalks, or parking areas. Roadway runoff can be directed into swales via flush curbs or small evenly-spaced curb cuts into a raised curb. Swale systems can be integrated into traffic calming devices such as chicanes and curb extensions.

Rain Barrels and Cisterns are low-cost, effective, and easily maintainable retention and detention devices that manage rooftop runoff. For residential application, a typical rain barrel design includes a hole at the top to allow for flow from a downspout, a sealed lid, an overflow pipe, and a spigot at or near the bottom of the barrel. The water can be used for lawn and garden watering or, if treated, for other uses such as supplemental domestic water supply.

Permeable and Porous Pavement is an alternative paving material used to infiltrate rainwater and reduce runoff, while providing for a more aesthetically pleasing site. The effective imperviousness of any given project is reduced while land use is maximized. Permeable and porous pavement may be used in parking lots, alleyways, walkways, driveways, and bus stops.

Tree Box Filters are mini bioretention areas installed beneath trees to control runoff, especially when these types of facilities are distributed throughout a project or Plan Area. Runoff is directed to the tree box, where it is cleaned by vegetation and soil before entering a catch basin. The runoff collected in the tree boxes also help irrigate the trees.

Public Utilities

The Plan Area requires the extension of public utility and communication infrstructure to serve the future uses. Public utilities refer to energy (gas and electric) and communications (phone and cable television) for the Plan Area.

Energy

Pacific Gas and Electric (PG&E) supplies electricity and natural gas services to the City. PG&E has primary power service lines in close proximity to the Plan Area, including service lines along 3rd Street, Walnut Avenue, and Apple Avenue. Additionally,

natural gas service lines adjacent to the Plan Area include gas lines along a portion of Apple Avenue and a portion of 3rd Street. PG&E will provide adequate infrastructure to serve development of the Plan Area.

Communication

Charter provides cable television services and AT&T provides local and long distance telecommunications services to the City. Charter and AT&T will provide adequate infrastructure to serve development of the Plan Area.

Section 4.3
Public Services Plan

This section describes the public services available to support the new development within the Plan Area. These public services include law enforcement, fire protection, schools, parks, and solid waste collection.

Law Enforcement

The Greenfield Police Department provides law enforcement services in the City. The Police Department currently operates one station located at 215 El Camino Real, approximately three-quarters of a mile southwest of the Plan Area. The Police Department currently has 15 sworn officers (City of Greenfield Police Department 2012), with a ratio of one officer per 1,100 residents.

Fire Protection

The Greenfield Fire Protection District provides services to the City of Greenfield, including the Plan Area and other outlying areas. The District currently operates one station located near the corner of Oak Avenue and 4th Street, approximately one-quarter of a mile south of the Plan Area. The station responds to structural, wildland, vehicle, and miscellaneous fires; vehicle accidents, medical emergencies, and hazardous materials incidents. The District currently has two full time engineers and 14 volunteers. When necessary, the District receives assistance from the South Monterey County Fire Protection District, the California Department of Forestry and Fire Protection (Cal Fire), and other community fire departments within the Salinas Valley, including Gonzales and Arroyo Seco.

Building Safety

Major potential safety risks for buildings and other facilities come from exposure to fire, earthquake, aircraft accidents, and gas line explosions. Fire protection is discussed in the previous section. The nearest earthquake faults are the Reliez/Rinconada, about five miles west of the City, and the San Andreas, about 14 miles northeast of the City (Greenfield General Plan Final EIR, page 10-45). The Plan Area would be subject to potentially severe ground shaking from an earthquake on either fault. The provisions of the California Building Code, which include

requirements for soils and geotechnical analysis, are considered to reduce the risk of building damage and occupant safety to acceptable levels.

The future Yanks Air Museum is located about one mile north of the Plan Area, and is planned to include a 4,600 foot long landing strip, parallel to and about one quarter mile east of U.S. Highway 101. The City designated areas south of the proposed airstrip as Artisan Agricultural Visitor Serving to avoid dense populations in the area with the greatest potential for aircraft accidents (Greenfield General Plan Final EIR, page 10-51). The Plan Area is located about 2,500 feet south of this low density land use designation, and the airstrip centerline extension aligns to the east of the Plan Area.

The PG&E gas transmission pipeline serving the southern Salinas Valley follows 13th Street in the vicinity of Greenfield, and is about 1.5 miles west of the Plan Area (Pacific Gas and Electric Company 2012). The Plan Area is sufficiently distant from the gas transmission line that no damage would occur within the Plan Area were there to be an explosion near Greenfield.

Schools

The Plan Area is located within the boundaries of the Greenfield Union Elementary School District and the King City Joint Union High School District.

The Greenfield Elementary School District serves students from kindergarten through eighth grade. It operates three elementary schools and one middle school. During the 2010-2011 school year, district-wide enrollment was 2,800 students at an average of 23.2 students per classroom, which was below the California statewide average of 26.4 students per classroom. The elementary and middle schools are close to capacity and will require additional facilities to absorb projected growth in the City. The nearest elementary school to the Plan Area is the Cesar Chavez Elementary School, located at 250 Apple Avenue in Greenfield, approximately 0.5 miles east of the Plan Area.

The South Monterey County Joint Union High School District includes four high schools, serving a total student population of 2,000 in grades 9-12. Two high schools are located within the City limits:

Greenfield High School and South Monterey County Charter High School. During the 2010-2011 school year, Greenfield High School enrolled 897 students, with an average of 27.1 students per classroom. This average is above the California statewide average of 26.4 students per classroom. The campus can accommodate up to 1,200 students and is expected to meet the needs of the City's anticipated growth. South Monterey County Charter High School serves about 100 students.

Using student generation rates provided by the *Greenfield 2005 General Plan*, residential build out of the Plan Area is anticipated to generate about 188 school-age children. To cover combined costs of maintaining and upgrading existing local schools to accommodate additional students generated by development of the Plan Area, future developers will be required to pay school impact fees.

Parks

The City owns a three-acre site within the Plan Area on which it plans to construct a neighborhood park. The Specific Plan includes development of an additional 1.6-acre park/open space amenity. Refer to Article 2.0 for a description of parks and recreational facilities within the Plan Area.

Solid Waste Collection and Disposal

Solid waste generated in the City is transferred to the Johnson Canyon Landfill located near Gonzales, approximately 17 miles north, where it is processed and landfilled. The Salinas Valley Solid Waste Authority is responsible for ensuring secure long-term solid waste disposal service to Greenfield and other Salinas Valley communities. The landfill is estimated to have a remaining refuse disposal capacity through the year 2040 (*California Integrated Waste Management Board 2008*). Therefore, it is anticipated that the landfill will have sufficient capacity to accommodate the Plan Area waste over the life of the Specific Plan. The Salinas Valley Solid Waste Authority has future plans to expand this landfill, which would increase capacity beyond current conditions and provide additional capacity for refuse beyond what currently exists.

Tri-Cities Disposal and Recycling, Inc. provides solid waste, recycling and yard waste collection for residential and commercial uses in the City of Greenfield. Tri-Cities has the capacity to serve all new development with the Greenfield city limits, including the Plan Area (Tri-Cities Disposal & Recycling 2012).

Section 4.4 Objectives, Policies, and Implementation Measures

The following public facilities objectives, policies, and implementation actions shall guide public facilities development within the Plan Area. Article 5.0, Plan Implementation, addresses the integration of these goals, policies and implementation measures, and the application of other federal, state and local standards and requirements, on Plan Area development. Article 5.0 also provides guidance on phasing, financing and long-term maintenance of Plan Area related improvements.

Objective PF-1: Adequate water supply and water infrastructure to meet the demands of the Plan Area.

Policy PF-1.1. Ensure sufficient water supply for the build-out of the Plan Area.

Implementation Measure:

1. The master developer and/or individual developer(s) shall demonstrate that adequate water quantity and quality can be provided prior to Plan Area building permits being issued. Based on the information provided, the City shall determine whether: 1) sufficient water supply is available from existing entitled water suppliers; or 2) water supply or system capacity shall be provided by a funded program or other mechanism.

Policy PF-1.2. Construct a water supply distribution system that expands on and is integrated with the City's existing system, and meets the needs of future development in the Plan Area.

Implementation Measures:

1. The master developer shall prepare a master water distribution plan that identifies backbone distribution infrastructure needed to serve new development within the Plan Area. Backbone infrastructure improvement plans for development within the Plan Area must be reviewed and approved for consistency with City standards prior to approval by the Public Works Department. The approval by the City staff does not need to be tied to a final map, but must occur prior to recording of any final map(s) within the Plan Area.

2. The master developer and/or individual developer(s) shall install backbone water supply distribution system improvements consistent with improvement plans. Where acceptable to the Public Works Department, these improvements may be phased to match development needs.

3. Individual project developer(s) shall install water distribution improvements, within the boundaries of their individual projects, that tie into the backbone water distribution system. Water system improvement plans for individual projects shall be subject to review for consistency with the master wastewater collection plan and City standards prior to the Public Works Department staff approval of any individual subdivision final map or commercial development within the Plan Area.

4. If it is necessary to construct water infrastructure outside the Plan Area, which benefits other future development projects, these improvements shall be subject to the proportional fair share and reimbursement criteria provided by the City.

5. As a part of the final map and improvement plans, the developer shall grant easements for the Public Works Department to maintain water supply mains that will be located within the Plan Area and dedicated to the City.

6. Maintenance of water supply infrastructure shall be the responsibility of the Public Works Department.

Policy PF-1.3. Facilitate water conservation to reduce potable water consumption.

Implementation Measures:

1 In public spaces, commercial and residential parking lot landscaping, and residential common areas, the master developer and individual developer(s) shall install only drought-tolerant landscaping. *[LEED ND GIB Credit 4; Homes SS-2; Homes WE-1; Homes WE-2]*

2. For residential development, limit turf to areas of active use, and in no case more than 50 percent of landscaped area. *[LEED ND GIB Credit 4; Homes SS-2; Homes WE-1; Homes WE-2]*

3. Design irrigation systems to minimize water use, including installation of ground moisture sensor controls, and temporary irrigation systems for drought tolerant plantings to be

removed, where feasible, when plantings are established. *[LEED ND GIB Credit 4]*

4. Equip residential and commercial facilities with low water use clothes washing machines and dishwashers, and dual-flush toilets or gray water recovery systems. *[LEED Homes EA-9]*

5. Commercial and multi-family residential buildings shall include a roof rainwater recovery system for storing irrigation water.

6. Use recycled water for park, streetscape, multi-family residential front yard, multi-family residential common area, and commercial landscape irrigation, if available adjacent to the Plan Area at time of construction. Pre-plumb to facilitate conversion to recycled water if recycled water is not available at the time of development, but will become available in the future. *[LEED ND GIB Credit 4; Homes WE-1]*

Objective PF-2: Adequate wastewater collection infrastructure to meet the demands of the Plan Area.

Policy PF-2.1. Construct a wastewater collection system that expands on and is integrated with the City's existing system, and meets the needs of future development within the Plan Area.

Implementation Measures:

1. The master developer shall prepare a master wastewater collection plan that identifies backbone collection infrastructure needed to serve new development within the Plan Area. Backbone infrastructure improvement plans for development within the Plan Area must be reviewed and approved for consistency with City standards prior to approval by the City Public Works Department. The approval by the City staff does not need to be tied to a final map, but must occur prior to recording of any final map(s) within the Plan Area.

2. The master developer and/or individual developer(s) shall install the backbone wastewater collection system improvements consistent with improvement plans. Where acceptable to the Public Works Department, these improvements may be phased to match development needs.

3. The master developer shall work with the City to ensure that the Plan Area wastewater collection system meets City standards and ties to the existing collection system.

4. New development shall pay its fair share of the cost of on-site and (if determined necessary) off-site sewer infrastructure. This shall include installation of necessary public facilities, payment of impact fees, and participation in a Capital Improvement Program.

5. If it is necessary to construct wastewater infrastructure outside the Plan Area, which benefits other future development projects, these improvements shall be subject to the proportional fair share and reimbursement criteria provided by the City.

6. Individual project developer(s) shall install wastewater collection improvements within the boundaries of their individual projects that tie into the backbone wastewater collection system. Wastewater collection system improvement plans for individual projects shall be subject to review for consistency with the master wastewater collection plan and related City standards prior to Public Works Department staff approval of any individual subdivision final map or commercial development within the Plan Area.

7. As a part of the final map and improvement plans, the developer shall grant easements for the Public Works Department to allow for maintenance of the wastewater collection system that will be located within the Plan Area and dedicated to the City.

8. Maintenance of wastewater collection infrastructure shall be the responsibility of the Public Works Department.

Objective PF-3: Adequate storm water collection, treatment, and discharge infrastructure to meet the demands of the Plan Area and protect water quality.

Policy PF-3.1. Construct storm water collection and disposal facilities that expands on and is integrated with the City's existing facilities, and meets the needs of future development within the Plan Area.

Implementation Measures:

1. The master developer shall prepare a storm water management master plan that identifies backbone infrastructure needed to serve new development within the Plan Area. Backbone infrastructure improvement plans for development within the Plan Area must be reviewed for consistency with City standards prior to approval by the Public Works Department. The approval by the City staff does not need to be tied to a final map, but must occur prior to recording of any final map(s) within the Plan Area.

2. Individual project developer(s) shall install storm water management improvements within the boundaries of their individual projects. Storm water management improvement plans for individual projects shall be subject to review for consistency with the master storm water management plan and related City standards prior to staff approval of any individual subdivision final map or commercial development within the Plan Area.

3. As a part of the final map and improvement plans, the developer shall grant easements for the Public Works Department to allow for maintenance of storm water collection and disposal facilities that will be located within the Plan Area and dedicated to the City.

4. Maintenance of storm water collection, treatment, and discharge infrastructure that are on public property or contained within public right-of-way or utility easements shall be the responsibility of the Public Works Department.

Policy PF-3.2. Construct a storm water collection and disposal system that diverts and stores roof run-off for later irrigation use and/or retains and encourages percolation of storm water generated within the Plan Area to pre-developed levels.

Implementation Measures:

1. The storm water management master plan shall incorporate use of structural and institutional best management practices, low impact development designs for storm water quality management, and minimize soil erosion for the

Plan Area and adjacent properties outside the Plan Area. The storm drainage plan shall be subject to review and approval of the Public Works Department prior to issuance of the first grading permit, and shall be incorporated into future development improvement plans. The master developer and/or individual project developers shall finance and construct the backbone storm drainage collection and retention infrastructure. *[LEED ND GIB Credit 8]*

2. The master developer and/or individual developer(s) shall design, finance, and construct storm drainage collection improvements, which incorporate low impact development techniques, or store water for irrigation use. Storm water collection system improvement plans shall be subject to review and approval of the Public Works Department prior to issuance of grading permits for individual projects in the Plan Area.

3. Utilize best management practices and low impact development principles when designing storm water runoff facilities.

Policy PF-3.3. Utilize best management practices and low impact development designs to minimize surface water quality degradation from discharge of storm drainage.

Implementation Measures:

1. The master developer shall prepare and submit a storm water pollution prevention program application to the Regional Water Quality Control Board and the Public Works Department to secure a National Pollutant Discharge Elimination System (NPDES) General Construction Permit for the entire Plan Area. The master developer and/or individual developer(s) shall incorporate the structural and institutional best management practices and low impact development designs identified in the storm water management plan in improvement plans for their respective projects. The Public Works Department must review these plans to ensure inclusion of the practices prior to approval of a grading or building permit for that phase. *[GIB Prerequisite 4; Homes SS-4]*

2. Prior to construction, contractors and their personnel shall be trained in appropriate best management practices to ensure water quality is protected. Those construction practices shall include erosion control, sediment transfer reduction, and dust control measures. A construction manager familiar with NPDES permit requirements must monitor the construction activities to protect water quality. This provision shall be included as a note on construction improvement plans. *[GIB Prerequisite 4; Homes SS-4]*

3. No chemical pesticides shall be utilized in the maintenance of common landscaped areas, open space areas, or parks. Fertilizers shall be applied sparingly, and shall be derived from natural sources, such as fish emulsion or manure.

4. The master developer shall cooperate with the City to create a public education program for future residents to increase their understanding of water quality protection, which should include but not be limited to:

   - Hazardous material use controls;
   - Hazardous materials exposure controls; and
   - Hazardous material disposal and recycling.

Hazardous materials could consist of cleaning products, paint, oil, fertilizers, weed killers etc. The education materials shall encourage the use of alternative methods, and prohibit the dumping of hazardous materials in open space areas or the storm drain system. Further, the master developer shall require that all storm drain catch basins are labeled to discourage illegal dumping of hazardous materials.

5. To the extent feasible, direct surface storm water run-off to percolation swale and basin areas, rather than directing storm water to storm drain pipes.

6. Use biotreatment where storm water runs off paved surfaces onto pervious surfaces.

7. Utilize sediment traps, evaporation basins, flow dissipaters, and other methods to reduce the volume and speed of storm water run-off and reduce pollutant loads. *[LEED ND GIB Credit 8]*

Policy PF-3.4. Reduce potential for soil erosion during grading and other site preparation activities.

Implementation Measures:

1. Erosion Control Plan(s) shall be prepared by the master developer or individual project developers and submitted to the Public Works Department for review and approval prior to issuance of a grading permit. Soil exposed during grading that is no longer under active construction shall be stabilized.

2. Slope stabilization and erosion control efforts (during both the construction and post-construction phases) shall only utilize mesh products that are made of biodegradable natural fiber materials. Plastic materials (such as silt fencing) may only be used if they are relatively solid (cannot entrap wildlife) and are removed from the site following use.

Objective PF-4: Adequate public utilities and communications infrastructure.

Policy PF-4.1. Provide electrical, gas, and communications infrastructure that serves the needs of the Plan Area, and, where appropriate, is subject to proportional fair share and reimbursement.

Implementation Measures:

1. The master developer and/or individual neighborhood developer(s) shall construct all new electrical, gas, and communications lines underground within the Plan Area, in coordination with the service providers. Existing lines and cables within the Plan Area shall also be placed underground. The master developer shall work with the telephone and cable service providers to construct the most technically advanced underground communications infrastructure, which will assist in promoting telecommuting and home occupations.

2. If it is necessary for a Plan Area developer to fund and construct public utilities infrastructure outside the Plan Area, which benefits other future development projects, these improvements shall be subject to the proportional fair share and reimbursement criteria provided by the City.

3. As a part of the final map and improvement plans, the developer shall grant easements for applicable service providers (PG&E, Charter) to allow for maintenance of utility infrastructure improvements to be located in the Plan Area.

4. Maintenance of public utilities and communications infrastructure shall be the responsibility of the applicable service provider (PG&E, Charter, etc.).

Objective PF-5: Adequate essential public safety services and building safety standards to meet the needs of future residents.

Policy PF-5.1. Pay a fair share for public safety capital improvements that are necessary to provide response to emergencies, within the acceptable response times of the City's Police and Fire Departments, for service calls within the Plan Area.

Implementation Measure:

1. The master developer and/or individual neighborhood developer(s) shall pay public safety impact fees to the City, consistent with the City's fee program and/or future development agreement, if any. Fees shall be paid prior to receiving a building permit for each residential unit or commercial building, or as otherwise stipulated in the fee ordinance or development agreement.

Policy PF-5.2. Design all buildings, facilities, and utilities for public safety.

Implementation Measures:

1. The master developer and individual project developers shall conduct design level geotechnical analysis for individual projects. All recommendations of the analyses shall be incorporated into improvement plans for all infrastructure, residential, and commercial development projects in the Plan Area.

2. The master developer and individual project developers shall construct all improvements consistent with the latest edition of the California Building Code.

Objective PF-6: Adequate school services to meet the needs of future residents.

Policy PF-6.1. Pay a fair share for capital improvements necessary to provide for adequate educational facilities.

Implementation Measure:

1. The master developer and/or individual neighborhood developer(s) shall pay the state mandated school impact fees to the City/School Districts, consistent with the state required development fees. Fees shall be paid prior to receiving a building permit for each residential unit or commercial building, or as otherwise stipulated in the fee ordinance or development agreement.

Objective PF-7: Adequate solid waste services to meet the needs of future residents.

Policy PF-8.7. Provide infrastructure to allow for adequate solid waste disposal and recycling services, and facilitate reduction, reuse, and recycling programs.

Implementation Measures:

1. Prior to City approval of a residential or commercial final map or the start of construction on a commercial project, the master developer

and/or individual neighborhood developer(s) shall obtain verification from the Tri-Cities Disposal and Recycling that it can provide solid waste collection services to meet demand from build out of the Plan Area.

2. Where curbside pick-up is not practical, the developers shall provide conveniently located centralized refuse and recycling collection facilities for each development.

3. The master developer and/or individual neighborhood developer(s) shall distribute to all home buyers the educational program provided by the service providers as part of a countywide waste reduction, reuse and recycling efforts.

4. Require all construction contracts to include construction waste reduction and recycling clauses.

5. Require public-use recycling cans at all locations where public-use refuse cans are provided.