

Infrastructure Capacity

Issue Brief

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This issue brief provides a general overview of the City's current and projected infrastructure capacity for new residential growth.

Please note: Any new residential project would need to be reviewed individually by each of the City Department and may require an Environmental Impact Report and mitigation measures for the project.

Wastewater Treatment Plant Capacity

The City's wastewater treatment plant (WWTP) is permitted to treat and discharge 7.5 million gallons per day (mgd). This 7.5 mgd represents a dry weather flow capacity. The city is currently considering significant upgrades to the WWTP to achieve recently mandated water quality discharge requirements. The proposed project will not add capacity. Existing flow usage is 5.6 mgd and therefore the total remaining flow capacity is 1.9 mgd. It's important to note that any development of property (even areas that are already part of the general plan) will consume a portion of the City's remaining capacity.

In order to convert this remaining flow capacity into a figure that describes development capacity, an average flow per person per day is calculated and used in conjunction with the average number of persons per dwelling unit. Using the city's historical number of 2.5 persons per dwelling unit and the calculated average flow of 85 gallons per person per day, the WWTP has a remaining capacity of 8,941 dwelling unit equivalents for future residential and non-residential uses. (Dwelling unit equivalents are intended to provide a common unit of measurement for stating available capacity for all potential future land uses.) The City's WWTP capacity is summarized in the following table.

Wastewater Treatment Plant Capacity	7.5 mgd*
5-year ADWF**	5.6 mgd
Remaining Capacity, mgd	1.9 mgd
Remaining Capacity, dwelling unit equivalent	8,941 edu

Based on current City proportions of residential and non-residential sewer usage, of 85% and 15% respectively, it is estimated that this remaining capacity could accommodate the following amount of growth:

Residential Uses (85%)	approximately 7,600 edu
Non-residential Uses (15%)	approximately 1,341 edu

Note: From a treatment plant perspective, capacity is not allocated between user types. User type is considered immaterial to the wastewater treatment plant. This information is provided solely as background for the Steering Committee.

*mgd = million gallons per day

**ADWF = average dry weather flow

Sanitary Sewer System

The existing sanitary sewer system has sufficient capacity for the infill development and redevelopment sites identified within the City. Connection to the sanitary sewer system for development of sites outside the City limits would require sanitary sewer capacity evaluation and potentially significant capital improvements. These capital improvement costs could be paid for through any combination of cost sharing agreements between the City and new projects, depending on site specific conditions. Although it is located outside of City limits, the Covell Village site would be less problematic to connect to (without major upgrades) due to its proximity to the City's sewer trunk line (gravity flow) that already traverses the property.

Stormwater Sewer System

Development of Cannery Park and projects outside of the city limits will require a drainage study to demonstrate that the incremental increase in runoff will not adversely impact drainage ways or downstream properties. A drainage study may lead to dedication of land for stormwater detention facilities along with associated capital improvements and on-going operation and maintenance expenses.

City Water System

SB610 is state law that requires water suppliers to certify whether or not they have adequate water supplies to meet the demands of proposed new developments. If the water supplier does not have adequate capacity to meet new demands, the developer is required to bring online adequate water supplies to meet their project needs without impacting existing customers.

Water System Capacity Requirements (reference: SB610 Water Supply Assessment)

Requirements	Capacity (gpm*)
Peak Hour Demands (July 2006)	27,500 gpm
10% reserve capacity	2,750 gpm
Fire suppression capacity	3,500 gpm
TOTAL Requirements	33,750 gpm
ACTUAL Summer Capacity	26,813 gpm
Current Deficit	<approx. 6,900 gpm>

*gpm = gallons per minute (?)

Additional deep replacement wells are planned for construction over the next several years to bring the water system back into balance between system requirements and demands for existing customers. The City has certified an Environmental Impact Report (EIR) for construction of up to 3 deep replacement wells with a combined maximum design pumping capacity of approximately 4,500 gpm and one water storage tank facility with a 4 mgd (million gallons per day) capacity as soon as possible to replace lost well capacity due to wells taken out of service since 1987. If any new projects not anticipated in the existing general plan are brought online, they would be responsible for providing an adequate water supply (quantity and quality) to meet the new demands the project will create, without impacting existing customer service levels. Even in-fill projects that result from a change in land use, as currently designated in existing

General Plan, will be expected to assist in some way with the provision of water for its development. All new projects will be analyzed for a potential installation site of a new City well, feasibility subject to ground water supply and project size. All new projects will pay fees to the City for water connection and supply. With the development of existing redevelopment sites, such as the PG&E site or Cannery Park, the Environmental Impact Review for each project would analyze water supply options for the projects, and both projects would subject to paying city fees related to connection and supply. The city does not have information on what would be required at the PG&E site, but the Cannery Park project would be required to provide at least one well.

Transportation

The Public Works Department has identified critical transportation corridors that may be significantly affected by some projects individually, or by a combination of projects being considered on the potential sites list. At this point it is impossible to determine, for a given project or specific combination of projects, whether such degradation would result in an unacceptable level of service as defined in the current General Plan.

While almost any of the potential sites under consideration has some impact on the main roadways of the City, including Covell, Russell, Fifth, Pole Line, Cowell, Mace, etc., the most highly impacted roadways would likely include:

- Covell Boulevard (between Highway 113 and Pole Line Road)
- Mace Boulevard (between Alhambra Drive and Chiles Road)
- Pole Line Road (between Covell Boulevard and Cowell Boulevard)
- Richards Boulevard (between First Street and Research Park Drive)
- Russell Boulevard and Fifth Street (between Highway 113 and G Street)

And the most highly impacted intersections would likely include:

- Covell Boulevard and Highway 113
- Covell Boulevard and Pole Line Road
- East Eighth Street and Pole Line Road

It is hoped that this information can assist the Steering Committee in reviewing the potential sites for future residential development, but it should be noted that each proposed project would need to be reviewed on an individual basis for its potential transportation impacts and acceptable project mitigations. Additionally, site project alternatives would be reviewed and can be revised based on identified impacts during review of the Draft Environmental Impact Report for each project. Adjustments to the preferred land use alternative for the project can be made if traffic impacts (or any other impact) are deemed unacceptable by the City Council. A prioritized list of the potential sites would be useful in the instance where one site might have to be developed with fewer units due to impacts identified with the project's Draft EIR.

Fire Protection

The Fire Department provides service to approximately 10 square miles in the city limits. Through contracts, the department also provides services to 123 square miles of property outside the city limits, known as fire districts. These include East Davis Fire District (46 sq mi), No

Man's Land (56 sq mi) and Spring Lake Fire District (7.6 sq mi). The department received approximately 4000 calls for service in 2006. On average, 11% of the calls are for fire-related incidents, 51% are medical calls and 38% fall into other categories. Slightly more than half of the calls are in the geographic area served by Station 31, the downtown station.

The conclusions of a citywide analysis conducted in 1999 were as follows:

- The outlying stations (1350 Arlington Blvd. and 425 Mace Blvd.) have an adequate distribution, concentration and response reliability.
- The downtown station does not provide adequate coverage for the district it is assigned as the first due Engine Company (that is, doesn't provide 5 minute response time to all areas). The reliability of the downtown station being available for an emergency is not adequate (second and third due engine companies have to respond as the downtown engine is frequently on another call).
- A fourth fire station would provide improved response time to the north, northeast and northwest areas and provide increased reliability of an available engine company with better response time in the downtown area without moving the engine companies from 425 Mace or 1350 Arlington in to cover downtown when two engine companies are busy. The outlying stations would remain in their neighborhoods not in the downtown area for coverage.

The City Council approved planning for a fourth fire station. However, a significant budgetary problem continues. A fourth fire station cannot be built or staffed until a revenue stream is identified to finance the on going operational costs.

The 1999 fire station location analysis has been reviewed and verified, based on the City's 5-minute response time standard, by outside consultants. The recommendation for the addition of the fourth fire station in 1999 was a current need and was projected to be well utilized as future call volumes increased. Since the 1999 report, which utilized data from 1985 through 1998, call volume has increased 53.7%.

Based on current information, the Fire Department indicates that it will continue to serve in-fill development to the best of its ability using existing resources, while recognizing that service response times and the Department's ability to respond to simultaneous calls will not always meet the local response guideline. As the Fire Department struggles with existing service demands, any development will continue to exacerbate the problem. With all new projects, the Fire Department will push to obtain additional resources for the provision of its services, in an effort to work towards addressing its existing needs. In large projects, especially the development of land outside of City limits, inclusion of the fourth fire station will be increasingly critical.

Police Protection

The Police Department reviewed the potential site list in regards to the ease and timeliness of police response, and concluded that the closer a project is to the current city limits the better. In other words, the Police Department's preference is that any new development be contiguous with existing city limits. Areas further from the current limits are harder for the department to incorporate into existing patrol responsibilities. For example, the area on the map identified as

D17- UCD West Village or D25- East of South Davis are more at the fringe of current police patrol areas, making them more problematic to proactively patrol. Many of the other areas identified as more infill type projects (e.g. C5- Grande, D10- Willowcreek Light-Industrial, D14- Little League Fields), are already part of existing police patrol areas.

On the issue of density, the Police Department noted that the denser the development, the more police response will be needed. Police stated that this is really more a factor of size of population than anything else. For example, if there is a one-acre parcel with a single family home with four people, it less likely that parcel would require the same level of police services as a one-acre parcel with 200 apartments containing 350 - 400 residents. The apartments have a greater need of services because there is just a higher concentration of people, people to commit crimes and/or be victims of crime.

Other factors that frequently impact police service, and these may not be part of your project focus at this time, include proximity to major arterials (particularly freeways), size of the development (meaning acreage), actual street layouts, mixture and proximity of commercial, industrial, retail and housing to each other, rental properties versus owner-occupied properties, and specific building designs. The Police Department will continue to review each major project's planning application and will provide recommendations regarding project safety, design that promotes crime prevention, and the project's overall conduciveness to police patrolling. Additional police officers would be hired based on future patrolling needs and budgetary constraints.