Exhibit A

# Northeast Line Light Rail Stations Plan
# Phased Infrastructure Recommendations

SUBMITTED TO THE
City of Sacramento

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January 2011

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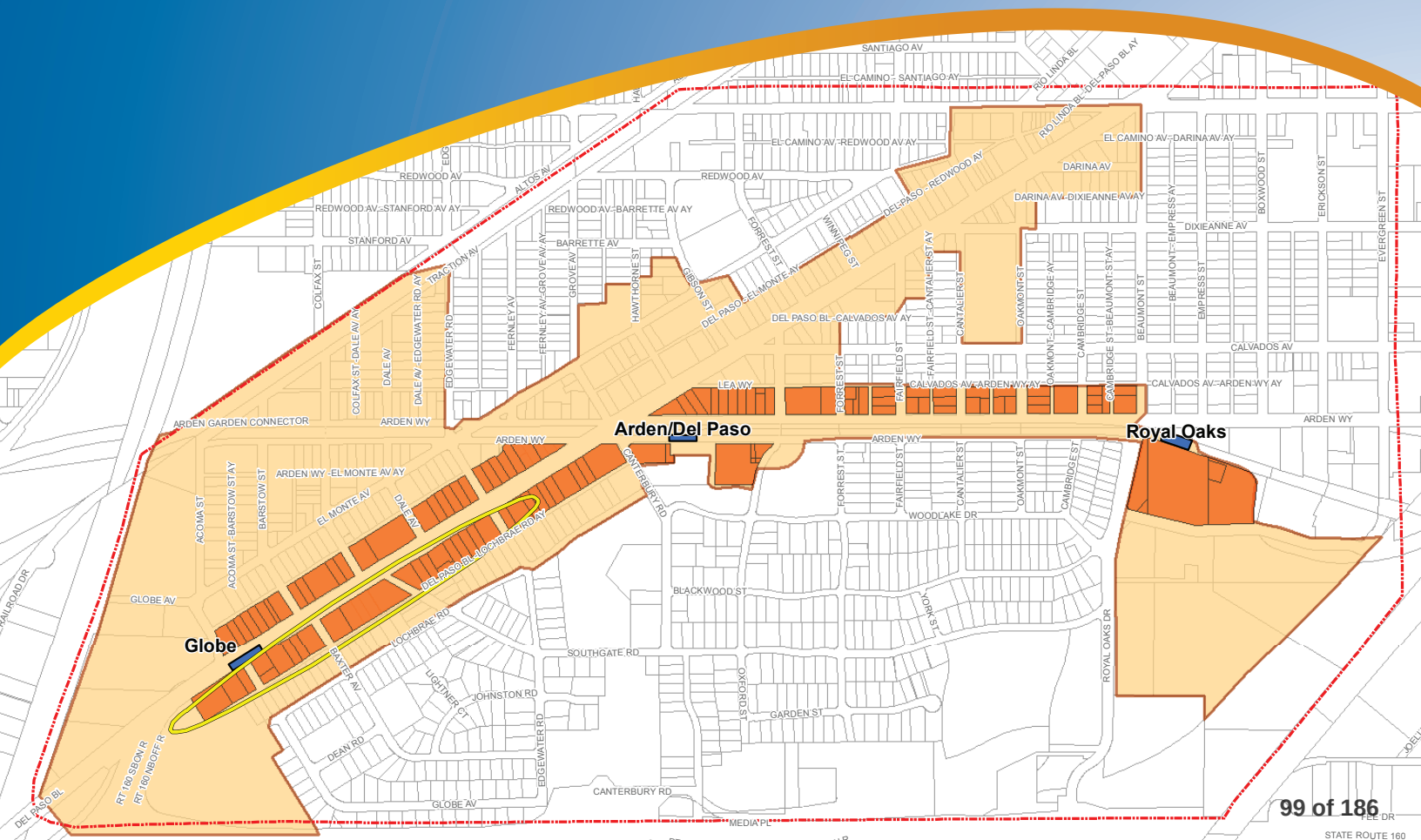

# REPORT FOR THE

# NORTHEAST LINE IMPLEMENTATION PLAN
# PHASED INFRASTRUCTURE RECOMMENDATIONS

**City Agreement #2010-0434**

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**JANUARY 2011**

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## Chapter Pages

# INTRODUCTION

## Project Description

The Northeast Line Light Rail Stations Plan (The Plan) was adopted by the City Council in December 2007. The Plan set forth the vision of an active, thriving transit-oriented residential and commercial neighborhood to maximize the advantages of the proximity to the existing three Light Rail Stations – Globe, Del Paso/Arden, and Royal Oaks. The Plan established proposed mixed land uses, goals, and policies that will guide future development.

The Plan study area encompassed a study impact area of roughly 570 acres, with a development focus within a quarter mile radius surrounding each of the existing three light rail stations. Newly envisioned land uses for these areas will present added infrastructure demands. Existing sanitary sewer, storm drainage, water, electrical power, telecommunications, natural gas and street improvement infrastructure capacity was analyzed and modifications proposed to adequately serve these new demands.

This report is being prepared with the goal to revisit the previously prepared infrastructure study for The Plan (dated March 2007) prepared by Nolte Associates, Inc. as a member of the Moore Iacofano & Goltman (MIG) Team. The report performs an analysis of the basic infrastructure needs and associated costs to support a realistic projection of growth by 2030 consisting of approximately 1,384 dwelling units and 112,950 square feet of commercial development. This reduced growth is located in a narrower Core Development Area focused on the Del Paso Boulevard Corridor and the Arden Way Corridor. This analysis relies on the previous infrastructure study with a focus on just the essential improvements necessary for the proposed development in the near term. The focus of the report is to identify key infrastructure investments that can be made at minimal cost to maximize development in the near term.

If the recommended infrastructure improvements specified in this report cannot be made in a timely manner, this report can serve as a guide for developers to determine which sites have the least infrastructure constraints. For such sites, there is a greater chance that infrastructure improvements can be realistically made on a project by project basis.

The recommendations contained in this report are intended to serve as a guide for prioritized infrastructure improvements that support future development for the plan area. The recommendations intended to represent the likely phasing of improvements, based on development potential (e.g., land availability, zoning, parcel size, proximity to transit, pending development proposals etc.). If in the process of making the improvements, an alternative or modification of this report's recommendations is presented, that alternative approach may be incorporated into the proposed improvement project.

# EXECUTIVE SUMMARY

## Tier I - Catalyst Sites

There are a total of 13 parcels grouped together in four areas consisting of a total of 3.15 acres that are considered the catalyst sites for the near term development. The Sacramento Housing and Redevelopment Agency owns 8 of the parcels, Sacramento Regional Transit District owns 1, and the remaining 4 are privately owned. The anticipated development of the combined catalyst sites is a total of 189 residential dwelling units together with a total of 54,960 square feet of non-residential (ground floor commercial) development.

For the development of these catalyst sites, it is recommended to upgrade the existing water main in the Del Paso/Lochbrae Alley and reconstruct the pavement of the alley with concrete pavement. The following is a summary of the estimated cost of construction for the Tier I infrastructure improvements.

**TIER I - CATALYST SITES**

| | |
|---|---|
| A. STREETWORK | |
| Streetscape Improvements | $0 |
| Del Paso Alleys | $346,300 |
| B. SEWER SYSTEM | |
| East | $0 |
| West | $0 |
| C. DRAINAGE SYSTEM | |
| Shed 151 East | $0 |
| D. WATER DISTRIBUTION SYSTEM | |
| Del Paso Alley | $477,056 |
| **TOTAL TIER I CONSTRUCTION (A-D)** | **$823,356** |

# Tier II – Near Term Development

The remainder of the Del Paso/Arden Way Corridor area is anticipated to have potential development in the near term to selected opportunity sites along the Del Paso and Arden Way Corridors. The anticipated development of all of the Tier II areas totaling 16.10 acres is 834 residential dwelling units together with a total of 285,601 square feet of non-residential development. Significant improvements are needed for the existing drainage system to allow development near the Royal Oaks Station. Upsizing of the existing sanitary sewer system on Edgewater Road is required for the added development along Del Paso Boulevard. The following is a summary of the estimated cost of construction for the Tier II infrastructure improvements.

**TIER II - DEVELOPMENT SITES**

| | |
|---|---|
| A. STREETWORK | |
| Streetscape Improvements | $0 |
| Del Paso Alleys | $268,088 |
| B. SEWER SYSTEM | |
| East | $273,139 |
| West | $783,641 |
| C. DRAINAGE SYSTEM | |
| Shed 151 East* | $5,663,908 |
| D. WATER DISTRIBUTION SYSTEM | |
| Del Paso Alleys | $347,625 |
| **TOTAL TIER II CONSTRUCTION (A-D)** | **$7,336,401** |

*The drainage system improvement necessary for the Tier II development in the vicinity of the Royal Oaks Station area assumes full construction of the piping and detention system downstream of Arden Way. Alternative mitigations and/or offsite improvement strategies (that achieve City performance requirements) of this system may be allowed on a case by case basis with approval of the City's Department of Utilities.

# Tier III – Full Buildout

Tier III is considered the full buildout of the Northeast Line Light Rail Stations Plan area. The original infrastructure study prepared in March 2007 details the anticipated growth projection and associated infrastructure costs for the full buildout of the Plan area. The following is the cost estimate summary table from the original infrastructure study. The costs estimates are inclusive of the Tier I and Tier II estimates above. The costs provides for major street beautification on Del Paso and Arden Way and major drainage improvements as well as the improvements necessary for the additional growth capacity. For brevity, the full detail of these estimates is not included with this focused study.

| | |
|---|---|
| A. STREETWORK | $19,569,360 |
| B. SEWER SYSTEM | |
| East | $273,139 |
| West | $1,234,617 |
| C. DRAINAGE SYSTEM | |
| Shed 151 East | $7,559,047 |
| Shed 151 West | $4,301,480 |
| Shed 153 | $2,337,660 |
| D. WATER DISTRIBUTION SYSTEM | |
| Globe Station Area | $1,507,359 |
| Arden - Del Paso Station Area | $1,466,859 |
| Royal Oaks Station Area | $2,715,188 |
| **TOTAL CONSTRUCTION (A-D)** | **$40,964,708** |

# LAND USE

A proposed development intensity land use analysis was prepared for the original Plan Area by the project planners Moore, Iacofano & Goltsman, Inc. (MIG). The land use analysis proposed higher intensity land uses for selected parcels surrounding the general area of each of the three existing light rail stations - Globe, Del Paso/Arden, and Royal Oaks.

It is envisioned that the sites will develop as either multi-family residential or mixed use multi-family residential/non-residential (commercial). The land use analysis proposed five different levels of development intensities (A-E) for the selected parcels. Each of the five development intensities were given a "Low" and "High" range for expected density of multi-family residential dwelling units per acre (DU/AC) and commercial floor area ratio (FAR). The following summarizes the assumptions used in the original Northeast Line Light Rail Plan analysis:

| | |
|---|---|
| Development Intensity A: | Residential - Low = 40 DU/AC, High = 60 DU/AC<br>Non-Residential - Low = 0.3 FAR, High = 0.4 FAR |
| Development Intensity B: | Residential - Low = 40 DU/AC, High = 60 DU/AC<br>Non-Residential – None Proposed |
| Development Intensity C: | Residential - Low = 25 DU/AC, High = 40 DU/AC<br>Non-Residential – None Proposed |
| Development Intensity D: | Residential - Low = 15 DU/AC, High = 25 DU/AC<br>Non-Residential - Low = 0.45 FAR, High = 0.6 FAR |
| Development Intensity E: | Residential - Low = 25 DU/AC, High = 40 DU/AC<br>Non-Residential - Low = 0.3 FAR, High = 0.4 FAR |

Projections of the number of multi-family residential units and the gross square feet of non-residential by land use were developed. Table A-1 in Appendix A presents the results of the original land use development intensity analysis. For the purposes of the original infrastructure analysis, the Technical Advisory Committee asked that only the "High" range be analyzed.

## TIER I - CATALYST SITES

For the purposes of this report, the core development area has been narrowed to encompass approximately 24.1 acres immediately adjacent to the main roadway corridors of Del Paso Boulevard and Arden Way. Within this core development area, there are a total of 13 parcels grouped together in four areas consisting of a total of 3.15 acres that are considered the catalyst sites for the near term development. The Sacramento Housing and Redevelopment Agency owns 8 of the parcels, Sacramento Regional Transit District owns 1, and the remaining 4 are privately owned.

The four groups of lots are 0.35, 0.43, 1.00, and 1.38 in size located on the southerly side of Del Paso Boulevard between Globe Avenue and Edgewater Road. Using the assumed High level of development intensity "A" from the original study (High : Residential = 60 DU/acre & Non-Residential = FAR 0.4), this would yield a total of 189 residential dwelling units together with a total of 54,960 square feet of non-residential (ground floor commercial) development over the 3.15 acres of the catalyst sites.

## TIER II – NEAR TERM DEVELOPMENT SITES

The remainder of the Del Paso Boulevard Corridor area is anticipated to have a potential of development in the near term to selected opportunity sites. The original Land Use Plan prepared by MIG identified opportunity sites along the Corridor. In addition to the sites identified above in the Tier I – Catalyst Sites, there is an additional 4.84 acres of development anticipated in these opportunity sites. Using the assumed High level of development intensity "A" from the original study (High : Residential = 60 DU/acre & Non-Residential = FAR 0.4), this would yield a total of 299 residential dwelling units together with a total of 84,410 square feet of non-residential development.

At the intersection of Del Paso and Arden Way there are three sites with a total area of 3.93 acres identified as opportunity sites. The two sites on the north side of Arden Way were assumed with a High level of development intensity "D" (High : Residential = 25 DU/acre & Non-Residential = FAR 0.6). The one larger site on the south side of Arden Way was assumed with a High level of development intensity "A" noted above. Using these densities would yield a total of 242 residential dwelling units together with a total of 73,685 square feet of non-residential development.

Near the Globe Station area on Arden Way there are three sites with a total of 7.32 acres identified as opportunity sites. The two sites on the north side of Arden Way were assumed with a High level of development intensity "E" (High : Residential = 40 DU/acre & Non-Residential = FAR 0.4). Using these densities would yield a total of 293 residential dwelling units together with a total of 127,506 square feet of non-residential development.

The total anticipated development of all of these three Tier II areas totaling 16.10 acres is 834 residential dwelling units together with a total of 285,601 square feet of non-residential development.

The Community Development Department (CDD) has estimated the total anticipated realistic growth projection of development within the year 2030 in the Plan area is approximately 1,384 residential dwelling units and 112,950 square feet of commercial development. This is somewhat less than the combined Tier I and Tier II projections of 1023 (= 299 + 834) for residential dwelling units.

The combined projection for non-residential of 340,561 (= 84,410 + 285,601) square feet is considerably more than the CDD's 2030 growth projection for the area. However, the non-residential uses do not have as significant of an impact on the utility system as the residential uses. The difference between the two estimates in non-residential development is roughly equivalent to only 60 multi-family residential units.

# NORTHEAST LINE LIGHT RAIL STATIONS - PLAN AREA

FIGURE I - 1

**February, 2011**

# STREETSCAPE

The Circulation and Pedestrian Access portion of the Northeast Line Light Rail Stations Plan (The Plan) was prepared by Moore Iacofano & Goltsman, Inc. (MIG). Working directly with the City of Sacramento Planning and Transportation staff as well as the Northeast Line Light Rail Stations Technical Steering Committee, MIG developed a streetscape master plan for the Plan area together with a set of illustrative typical plan and sections for each of the proposed modifications to the existing streets. For the original infrastructure study, the typical street sections developed by MIG were used to develop conceptual cost estimates for The Plan.

For the purposes of this focused study, the street modifications are limited to the Del Paso Boulevard and the Arden Way modifications. The following is a discussion of the proposed improvements for each of these two Corridors.

**Del Paso Boulevard:** The City of Sacramento Transportation Department is currently under contract with a consultant for the design of improvements to Del Paso Boulevard within the Plan area from Highway 160 to Arden Way. The design of the improvements is being funded through a mixture of funding sources including City of Sacramento, Sacramento Area Council of Governments (SACOG), and Sacramento Housing and Redevelopment Agency (SHRA). The construction of these improvements will be funded through a mixture of sources including SACOG and Federal Grants.

The project is designed to improve the aesthetic and travel experience along Del Paso Boulevard. The improvements will largely follow the design principles set forth in the original Northeast Line Light Rail Stations Plan streetscape guidelines with a focus on the bulbout, on-street parking, tree well modifications, high visibility crosswalks, and sidewalk areas. A new traffic signal is planned at the Colfax/Southgate intersection. Underground utility work is limited to storm drainage modifications necessary to support the bulbout design. The plans do not include the Globe Light Rail Station decorative streetscape plan originally envisioned in The Plan. The total project cost is estimated at $3.3 million with construction of the project scheduled for 2011. This project will greatly enhance the development potential of the Del Paso Boulevard Corridor portion of the Study Area by providing frontage improvements for the parcels facing the street.

**Arden Way:** The City's 2008 Transportation Programming Guide (TPG) has identified three projects along Arden Way within The Plan area. The following is a brief description of each project:

Arden Way - Del Paso Boulevard to Royal Oaks Drive: This is a streetscape project designed to improve both the aesthetics and travel experience along Arden Way. The project is listed as 15$^{th}$ on the Streetscape Enhancements (Other Corridors) list contained in the TPG.

Arden Way - Royal Oaks Drive to Evergreen Street: This is a streetscape project designed to improve both the aesthetics and travel experience along Arden Way. The project is listed as 17th on the Streetscape Enhancements (Other Corridors) list contained in the TPG.

Arden Way - Beaumont Street to Evergreen Street: This is a project to install curb, gutter, and sidewalk improvements. The project is listed as 9th on the Pedestrian Improvements list contained in the TPG.

While all of the above three projects are contained in the TPG, none of these projects are currently funded. Conceptual cost estimates for these three projects are not available. As funding is made available, the projects will be implemented based upon their TPG rankings. Due to the significant costs of these projects, this focused study does not recommend improvements to Arden Way be included as a key infrastructure investment for the immediate needs of the Focus Study Area.

**Del Paso Boulevard Alleys:** While not a focus of the original infrastructure study improvements, the existing Alleys parallel to Del Paso Boulevard (El Monte/Del Paso Alley on the north and the Del Paso/Lochbrae Alley on the south) have been identified by this focused study as a potential catalyst to development along the corridor. The majority of the existing alleys are a mixture of gravel and/or deteriorated asphalt paving, with limited areas of recently paved asphalt, and a small section of concrete paving. Two sections of the existing alleys have asphalt pavement in good condition, the Del Paso/El Monte Alley between Colfax Street and Dale Avenue, and the Del Paso/Lochbrae Alley between Edgewater Road and Cantebury Road.

With development along the Corridor, access to the developing parcels will primarily be provided at the rear of the frontage lots by utilizing the existing alleys. The alley must be fully improved if it is used as the main vehicular access to a project. The development of a single parcel in the middle of a block would trigger the need to improve the pavement of the full length of the alley access to the main connecting side street. These alley improvements can be cost prohibitive to a single developing parcel in the middle of a block that would need improvements to the entire alley length out to the main street.

The City's standard for alley improvements is 6-inch concrete paving (per Design and Procedures Manual, Section 15, Plate 15-14). The concrete paving is a requirement because the typical standard 20 foot alley does not meet the minimum requirements for street width for Federal roadway maintenance funds. The concrete paving provides a longer lasting surface; however, the initial construction costs are considerably more expensive.

However, the City has allowed the use of asphalt pavement on alleys in selected areas within the City. The use of asphalt paving in the Study area may be allowed for a project on a case by case basis with approval from the City's Department of Transportation. For the purposes of this study, concrete paving has been used to provide a conservative estimate for the cost of alley pavement reconstruction.

## FUTURE ACTION/RECOMMENDATION

Improvement of the alley pavement (possibly in conjunction with watermain upsizing improvements) would be a significant benefit to individual parcel development along the Del Paso Boulevard Corridor. Therefore, this study recommends reconstruction and concrete pavement of the alleys as a key infrastructure investment to serve the immediate needs of the core development area.

# NORTHEAST LINE LIGHT RAIL STATIONS PLAN - STREETSCAPE PLAN

FIGURE III-1

**February, 2011**

# SANITARY SEWER

The Northeast Line Light Rail Stations Plan (The Plan) project area is primarily served by two separate Sewerage Collection Basins, Basins G304 & G305. The Basins are generally divided through the project area following Canterbury Road, Woodlake Drive, Cambridge Street, Beaumont Street and El Camino Avenue/Darina Avenue Alley.

For this focused study, the two main development areas along the Del Paso Boulevard and Arden Way Corridors were examined. The following is a description of the sewer improvements for each area.

**Del Paso Boulevard Corridor:** This area is served by the G304 collection system with the existing 10 inch main line located in Edgewater Road, the Del Paso Road/Lochbrae Alley, and the El Monte/Del Paso Alley. As identified in the original infrastructure study, the full development of this area will require significant sewer improvements to the downstream collection system. However, this included the impacts from the full development of the El Monte Triangle area.

The original study also noted that a portion of the Globe Station/Del Paso Station areas could be developed by utilizing the existing excess capacity of the existing collection system. An estimate of the existing flow rates in the system was made at the junction of the collection system pipelines at the intersection of Edgewater and Del Paso/Lochbrae. It was found that the main collection pipeline had an excess capacity at this point of approximately 207 ESDs (Equivalent Single Family Dwelling Units with an average flow rate of 400 gallons per day per unit). Using a multi-family rate of 0.75 ESDs per unit, this would potentially allow up to 276 multi-family units to be constructed before this pipeline would need to be upsized.

The total of the Tier I catalyst sites in this focus study area along the Del Paso Corridor are estimated to have 189 multi-family residential units and 54,960 square feet of non residential development. Using the above sewer generation rates, this would be a total of 153 ESDs (= 0.75 x 189 + 0.2/1000 x 54,960). This is well within the additional estimated capacity of the existing sewer system of 207 ESDs as noted above.

Based on the opportunity sites and associated land use densities presented in the Land Use Plan from the original Northwest Light Rail Stations Plan by MIG, a total of 408 multi-family residential units and 91,598 square feet of commercial development are anticipated for the Del Paso Boulevard Corridor. Note the boundary of these development estimates are limited to the area southwest of Canterbury Lane and do not include the development along Arden Way immediately east of the Del Paso/Arden intersection. Using a factor of 0.75 ESDs per multi-family unit and 0.2 ESDs per 100 square feet of commercial, this equates to a total of 324 ESDs. This means that approximately 64% (=207/324) of this focused study area of the Del Paso Corridor can be developed before the upgrades to the downstream system are necessary.

## FUTURE ACTION/RECOMMENDATION

Upgrades to the downstream system are anticipated to be necessary with approximately 64% of the anticipated development along the focused study area of the Del Paso Corridor. Impact fees should be collected from both the Tier I and Tier II development to pay a fair share of the future system upgrades.

**Arden Way Corridor:** This area is served by the G305 collection system. As noted in the original infrastructure study, the main 12 inch collection pipeline located in Royal Oaks Drive does not have sufficient capacity for the increased flows from the proposed development around the Royal Oaks Station. Rather than upsize the entire length of the main pipeline from the Royal Oaks Drive / Evergreen Street intersection all the way to where it leaves The Plan area at Canterbury Road at Highway 160, it was recommended to create a new direct connection to the 72 inch interceptor at the Royal Oaks Drive / Evergreen Street intersection. The existing 12 inch pipeline north of the intersection and the proposed 15 inch pipeline in Evergreen Street would both be connected directly to the 72 inch interceptor at this point. This will eliminate the need to upsize a considerable length of pipeline. It will also reduce the flows into the downstream system thus allowing the G304 system modifications as noted in the original infrastructure study.

## FUTURE ACTION/RECOMMENDATION

The direct connection of the existing system and the construction of the new 15 inch pipeline in Evergreen Street would be a key infrastructure investment to serve the needs of this focused study area.

# NORTHEAST LINE LIGHT RAIL STATIONS PLAN- SEWER PLAN

FIGURE IV - 1

February, 2011

Feet 200 100 0 200

N W E S

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# STORM DRAINAGE

In general, the majority of the Northeast Line Light Rail Stations Plan (The Plan) area drainage system is more than 40 years old. There have been numerous reported instances of street flooding within The Plan project area. Modeling studies indicate that there will likely be localized structure flooding during the projected 100-year storm event.

The Plan project area is located primarily within two separate Drainage Basin Areas, Basins 151 and 153. These two Basins are generally divided along the Del Paso Boulevard corridor. The following is a description of the drainage improvements for each area.

**Del Paso Boulevard Corridor:** The Del Paso Boulevard Corridor generally drains northwesterly into the Basin 153 system to Sump 153 located near the western end of Stanford Avenue which pumps into the Natomas East Main Drainage Canal. Minor improvements to the collection system inlets are proposed with the Del Paso Boulevard Streetscape Project (Highway 160 to Arden Way).

The system improvements envisioned in the original infrastructure study were to upsize the collection system. The study utilized the Hydrology Standards contained in the Sacramento City/County Drainage Manual (December 1996) for this analysis. The peak 10-year storm flow rates were determined utilizing the 10-Year Peak Flow rates from the Sacramento Method Rainfall Zone 2 (Figure 2-14), an assumed imperviousness of 80%, and the basin sub-shed areas. Proposed pipe sizes were determined using Manning's Equation and a minimum flow rate of two feet per second in the pipe. A detailed topographic survey of the Plan Area was considered beyond the scope of the work, and therefore the pipe sizes will need to be verified when more accurate information is available during the detail design of the system.

The proposed development of this focused study is limited to the parcels immediately adjacent to the Del Paso Boulevard Corridor. The majority of these parcels are highly impervious with either existing structures or paving. Therefore the drainage characteristics are not expected to change significantly.

The 100-year flooding is limited in this Corridor to a few parcels at the northeasterly end near the Canterbury/Lochbrae intersection. It is expected that development of parcels in this area will require floodproofing of the proposed structures.

**Arden Way Corridor:** The Arden Way Corridor generally drains southerly into the Basin 151 system to Sump 151 located east of Lathrop Way which drains into the American River. The original infrastructure study divided the Basin 151 improvements into two basic areas, West and East. The majority of the improvements identified in the original infrastructure study for the Basin 151 East area affect the anticipated development of this focused study for the area surrounding the Royal Oaks Station. This area has significant drainage capacity and floodplain issues. Upsizing of the existing main drainage pipeline system will be very expensive. In

addition, upstream pipeline and detention improvements within the Swanston Station area are also necessary.

**FUTURE ACTION/RECOMENDATION**

For this focused study, we have included an estimate of the costs for the main drainage pipeline system improvements for the Basin 151 East shed from Arden Way south to the detention basin. These improvements are considered necessary for unrestricted development of this area.

Funding for these drainage improvements has not been identified at this time. The City does not currently have funds available for drainage system Capital Improvement Projects (CIPs), but is hoping to implement a City wide drainage fee to fund projects in the future.

Development in the Royal Oaks Station area may be able to provide alternative solutions to mitigate the drainage impacts. Through a more detailed hydraulic study of the system and the project impacts (considered beyond the scope of this focused study), it may be possible to provide on-site/off-site storage, piping improvements, or combination of the two that can effectively mitigate the project impacts at a reduced cost. These improvements would be reviewed and approved by the Department of Utilities on a case by case basis.

## Stormwater Quality

The City of Sacramento adopted the Stormwater Quality Design Manual for the Sacramento and South Placer Regions (May 2007), a joint effort of the communities in the greater Sacramento region. This manual had not yet been adopted at the time of the completion of the original infrastructure study (March 2007). Therefore, a brief description of the water quality requirements for future development is being provided.

The manual provides locally-adapted information for design and selection of three categories of stormwater quality control measures: source control, runoff reduction and treatment control. Per the requirements, multi-family and commercial, projects greater than 1 acre are required to implement permanent post-construction treatment measures.

**FUTURE ACTION/RECOMENDATION**

The existing storm drainage detention basins in the Basin 151 area are envisioned with future improvements to implement regional water quality treatment measures. However, until such measures are implemented, multi-family and commercial projects over 1 acre within The Plan area will be required to construct permanent post construction stormwater quality measures.

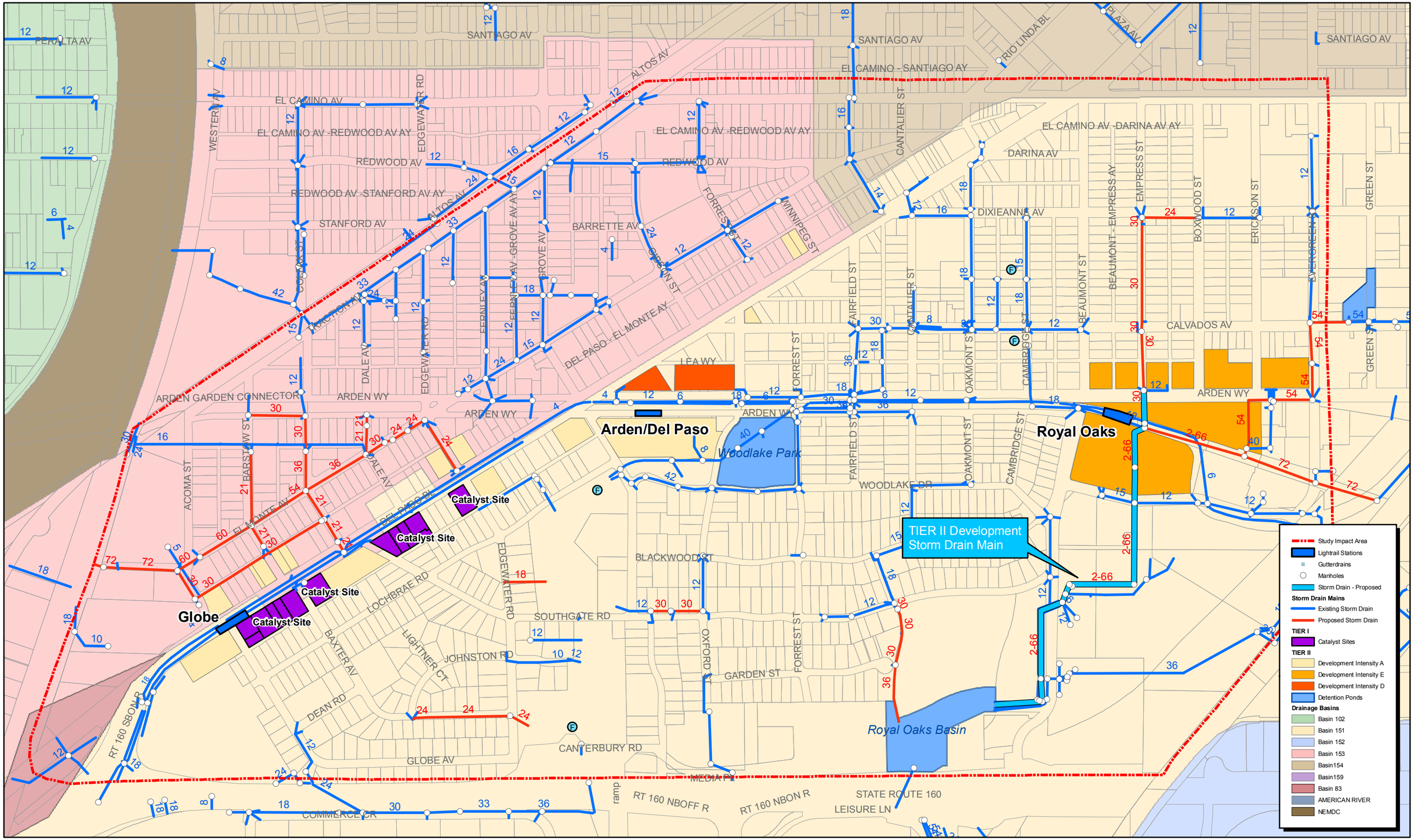
# NORTHEAST LINE LIGHT RAIL STATIONS PLAN- 100 YEAR FLOODPLAIN

FIGURE V - 1

February, 2011

Study Impact Area
Ten Year Floodplain
One Hundred Year Floodplain
Lightrail Stations
TIER I
Catalyst Sites
TIER II
Development Intensity A
Development Intensity E
Development Intensity D

Feet 200 100 0 200




# NORTHEAST LINE LIGHT RAIL STATIONS PLAN - STORM DRAIN PLAN

FIGURE V-2

**February, 2011**

200 100 0 200 Feet

N W E S

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# WATER SUPPLY

The Northeast Line Light Rail Stations Plan (The Plan) project area is generally served by an extensive system of service mains ranging in size from 4 to 8 inches in diameter. The system in The Plan project area was generally constructed between the 1920s to 1960s.

The existing corridors along Del Paso Boulevard and Arden Way are both well served by 12 inch distribution mains. However, the existing mains in the areas adjacent to these two corridors are generally undersized for the expected level of development of this focused study. The following is a description of water improvements for each area.

## FUTURE ACTION/RECOMMENDATION

**Del Paso Road Corridor:** The focused study envisions development to occur within the immediate area adjacent to Del Paso Road. The northerly side of the Corridor is served well by an existing 12 inch watermain located in the street along the northerly frontage. However, the southerly side of the Corridor will need to upsize the existing 6 inch main located in the alley to an 8 inch main to serve the expected development water/fire needs.

The replacement of this watermain would be a key infrastructure investment to serve the immediate needs of the focused study area. The main replacement could be performed in conjunction with the pavement replacement of the alley on this side of the Corridor.

**Arden Way Corridor**: The development along the Arden Way Corridor is expected to occur between Royal Oaks Drive and Evergreen Street. This area is well served by an existing 12 inch main located in Arden Way. To the south, the existing 8 inch main located in Royal Oaks Drive and Evergreen Street would serve the needs of the focus study development. However, as recommended in the original infrastructure study, this main should be upsized to a 12 inch main with further development to the south. To the north, the existing 6 inch mains should be replaced with 8 inch mains to serve the water/fire needs of the development.

Future Transmission Main

TIER II Development Water Main

TIER II Development Water Main

TIER I Development Water Main

Catalyst Site

Catalyst Site

Catalyst Site

Catalyst Site

Globe

Arden/Del Paso

Royal Oaks

WELL 109

WELL 110

WELL 111

WELL 112

EL CAMINO AV

DIXIANNE AV

ARDEN WY

CALVADOS AV -ARDEN WY AY

LEA WY

DEL PASO BL

WOODLAKE DR

EVERGREEN ST

LOCHBRAE RD

BAXTER AV

GLOBE AV

CANTERBURY RD

GARDEN ST

MEDIA PL

STATE ROUTE 160

LEISURE LN

COLFAX ST

BARSTOW ST

EL MONTE AV

GROVE AV

FOREST ST

CANTALIER ST

BOXWOOD ST

ERICKSON ST

OXFORD ST

RT 160 SBON R

RT 160 NBOFF R

RT 160 NBON R

ramp

Study Impact Area
Hydrant
Well
Proposed Water
Future 48" Transmission Main
Water Main

**Proposed Water System**
Tier I Development
Tier II Development
Lightrail Stations

**TIER I**
Catalyst Sites

**TIER II**
Development Intensity A
Development Intensity E
Development Intensity D

# NORTHEAST LINE LIGHT RAIL STATIONS PLAN - PROPOSED WATER UTILITIES

FIGURE VI - 1

**February, 2011**

200 100 0 200 Feet

N W E S

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# NATURAL GAS

The Pacific Gas & Electric Company (PG&E) supplies natural gas to the Sacramento area. The high pressure gas system in the Northeast Line Light Rail Stations Plan Area, generally is served by a grid system throughout the Plan Area. A 12 inch transmission main is located on the west side of the Plan Area running along the old railroad/Traction Avenue corridor. An 8 inch high pressure main crosses the Plan Area connecting to the 12 inch main at Edgewater Road south to Arden Way where it turns and follows the Arden Way corridor eastward and leaves the project area at the eastern boundary.

As discussed in the original infrastructure study, PG&E has stated the existing gas infrastructure in the Northeast Line Light Rail Stations Plan Area should be adequate to serve the level of development proposed in the majority of the Globe Station and Del Paso – Arden Station areas with relatively minor additions, unless an unusually large gas user locates in the area. In that case, facilities will be upgraded as necessary in order to accommodate the user.

**FUTURE ACTION/RECOMMENDATION**

With the development of the Royal Oaks Station area it is anticipated that a new transmission main loop will be needed to serve the development south of the Light Rail Tracks where currently only a dead-end 2 inch main exists located in Evergreen Street as well as a 2 inch main located in Royal Oaks Drive. It is anticipated that a 6 inch transmission main will need to be looped from the Arden/Evergreen intersection along Evergreen Street to Royal Oaks and south to the existing 6 inch main at Royal Oaks/Highway 160.

The above system costs are anticipated to be provided by PG&E. As with the original infrastructure study, no costs are anticipated with the development of the core development area.

# ELECTRICAL

The Sacramento Municipal Utility District (SMUD) provides electrical service to customers located within the Northeast Line Light Rail Stations Plan (The Plan) area. Power is transmitted to The Plan area by a series of 69 kilovolt (kV) transmission lines that feed overhead/underground 12 kV and 4 kV distribution systems. Within the project area, the 69kV transmission lines are located along the south side of Arden Way, along the west side of Evergreen Street, and along the El Monte-Del Paso Ally.

The Evergreen – Royal Oaks Substation is located south of Arden Way between Evergreen Street and Royal Oaks Drive. This substation is a 69-12kV substation and feeds the majority of the project area via an existing overhead/underground distribution system. The portion of The Plan area north of Arden Way is generally served by a 4kV overhead distribution system.

With the full buildout of the original land use projections for the Northeast Line Light Rail Stations Plan area, SMUD estimated that the additional electrical load from development may be approximately 15 to 23 megawatts at final buildout. With typical system improvements SMUD's distribution system should be able to handle this new load growth.

The Evergreen – Royal Oaks Substation is located on a 0.2 acre parcel just south of the light rail tracks within the middle of proposed development for the area. The development of the area around the substation will need to include proper building setbacks, screening, etc. to the station as well as the transmission lines leading to the station.

## FUTURE ACTION/RECOMMENDATION

It is expected that future development in The Plan area will be served from the 12 kV distribution systems. The existing overhead distribution system will remain in order to maintain service to existing customers; however, portions of this system may be placed underground in segments as new buildings or street widening improvements are constructed. For the purposes of this focused study, it is anticipated the existing overhead system will remain in place and no undergrounding of the existing overhead systems will be required.

# PROBABLE ESTIMATE OF CONSTRUCTION COSTS

The costs presented here to construct the infrastructure necessary for the Northeast Line Light Rail Stations Plan area are intended for planning level only. They include the general costs for the overall buildout of the anticipated development of The Plan area using today's dollars.

An estimate of the near term "Key Infrastructure" projects has also been prepared. This estimate is intended to provide the costs for the potential project identified as key infrastructure investments to assist development of the core development area.

This estimate is not intended to be utilized for the actual costs for specific projects. The final costs for each specific project will need to be estimated separately and could be considerably different than those shown here due to the uncertainty of the order, timing and scope of the actual development to be constructed. The estimates have been developed solely to give interested parties a magnitude of the scale of the costs of improvements.

The unit costs are based on actual costs of recent development within the Del Paso Boulevard area, planning level costs utilized by various City departments as well as engineering judgment. Final unit costs for each specific project will depend on the actual labor and materials costs for the conditions at the time of construction. These conditions might include the scope of the development and the schedule of the completion of the project.

The estimates are generally separated into the corresponding infrastructure report for the different utilities. For each utility the estimates have been divided either along the major boundaries as for sewer and storm drainage, or by the corresponding Station area. Assumptions and clarifications for the costs are noted at the bottom of the individual sheets.

The unit costs for the storm drainage improvements utilized the 1996 Master Storm Drainage report as a basis and were increased using the ENR cost index from 1996 yearly average (ENR = 5,620) to the July 2010 values (ENR = 8,865).

The Streetwork improvements are based on the conceptual street sections prepared by MIG. The unit cost per foot was developed for each section and multiplied by the length of street within the plan area. Right-of-way acquisition has not been included in the estimates since it is expected that the improvements will be constructed within the existing road right-of-way.

# CONSTRUCTION COST ESTIMATE SUMMARY

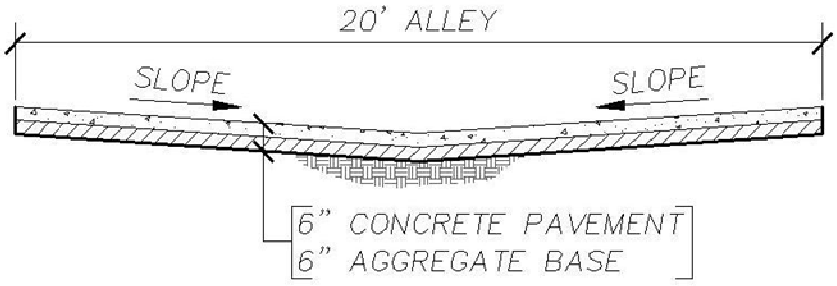
| TIER I - CATALYST SITES | |
|---|---|
| A. STREETWORK | |
| Streetscape Improvements | $0 |
| Del Paso Alleys | $346,300 |
| B. SEWER SYSTEM | |
| East | $0 |
| West | $0 |
| C. DRAINAGE SYSTEM | |
| Shed 151 East | $0 |
| D. WATER DISTRIBUTION SYSTEM | |
| Del Paso Alley | $477,056 |
| **TOTAL TIER I CONSTRUCTION (A-D)** | **$823,356** |

| TIER II - DEVELOPMENT SITES | |
|---|---|
| A. STREETWORK | |
| Streetscape Improvements | $0 |
| Del Paso Alleys | $268,088 |
| B. SEWER SYSTEM | |
| East | $273,139 |
| West | $783,641 |
| C. DRAINAGE SYSTEM | |
| Shed 151 East | $5,663,908 |
| D. WATER DISTRIBUTION SYSTEM | |
| Del Paso Alleys | $347,625 |
| **TOTAL TIER II CONSTRUCTION (A-D)** | **$7,336,401** |

# STREETWORK COSTS

| | DESCRIPTION | QUANTITY | UNIT OF MEASURE | UNIT PRICE | AMOUNT |
|---|---|---|---|---|---|
| **A. STREETWORK** | | | | | |
| 1. | Del Paso Alleys - Catalyst Sites | 1,440 | LF | $142.50 | $205,200 |
| | | 35% Contingency | | | $71,800 |
| | | Subtotal | | | $277,000 |
| | | 15% Engineering | | | $41,600 |
| | | 10% Construction Management | | | $27,700 |
| | Total Del Paso Alleys - Catalyst Sites | | | | **$346,300** |
| 2. | Del Paso Alleys - Tier II Sites | 1,115 | LF | $142.50 | $158,888 |
| | | 35% Contingency | | | $55,600 |
| | | Subtotal | | | $214,488 |
| | | 15% Engineering | | | $32,200 |
| | | 10% Construction Management | | | $21,400 |
| | Total Del Paso Alleys - Tier II Sites | | | | **$268,088** |
| | **TOTAL STREETWORK** | | | | **$614,388** |

# DEL PASO ALLEY PAVEMENT




| | Description | Quantity | Unit of Measure | Unit Price | Amount |
|---|---|---|---|---|---|
| 1. | Earthwork | 0.75 | CY | $30.00 | $22.50 |
| 2. | 6" Concrete Pavement | 20 | SF | $5.00 | $100.00 |
| 3. | 6" Aggregate Base | 20 | SF | $1.00 | $20.00 |
| | **Total Street Costs per LF** | | | | **$142.50** |

Assumptions:

1. One foot depth of earthwork over entire cross section.
2. "V" Gutter to be placed on center of alley.

# SEWER SYSTEM COSTS

## WEST SEWER SYSTEM COSTS

| DESCRIPTION | QUANTITY | UNIT OF MEASURE | UNIT PRICE | AMOUNT |
|---|---|---|---|---|
| **B. SEWER SYSTEM** | | | | |
| 1. Sewer Manhole | 16 | EA | $5,980.00 | $95,680 |
| 2. Sewer Pipe, 8" | 0 | LF | $80.00 | $0 |
| 3. Sewer Pipe, 10" | 0 | LF | $90.00 | $0 |
| 4. Sewer Pipe, 12" | 0 | LF | $105.00 | $0 |
| 5. Sewer Pipe, 15" | 0 | LF | $120.00 | $0 |
| 6. Sewer Pipe, 18" | 0 | LF | $130.00 | $0 |
| 7. Sewer Pipe, 21" | 1,635 | LF | $140.00 | $228,900 |
| 8. Sewer Pipe, 24" | 420 | LF | $150.00 | $63,000 |
| 9. Sewer Pipe, 27" | 480 | LF | $160.00 | $76,800 |
| 9. Service | 0 | EA | $500.00 | $0 |
| | **Subtotal** | | | **$464,380** |
| | 35% Contingency | | | $162,533 |
| | Subtotal | | | $626,913 |
| | 15% Engineering | | | $94,037 |
| | 10% Construction Management | | | $62,691 |
| **SEWER SYSTEM SUBTOTAL** | | | | **$783,641** |

# SEWER SYSTEM COSTS

## EAST SEWER SYSTEM COSTS

| DESCRIPTION | QUANTITY | UNIT OF MEASURE | UNIT PRICE | AMOUNT |
|---|---|---|---|---|
| **B. SEWER SYSTEM** | | | | |
| 1. Sewer Manhole | 7 | EA | $5,980.00 | $41,860 |
| 2. Sewer Pipe, 8" | 0 | LF | $80.00 | $0 |
| 3. Sewer Pipe, 10" | 0 | LF | $90.00 | $0 |
| 4. Sewer Pipe, 12" | 0 | LF | $105.00 | $0 |
| 5. Sewer Pipe, 15" | 1,000 | LF | $120.00 | $120,000 |
| 6. Sewer Pipe, 18" | 0 | LF | $130.00 | $0 |
| 7. Sewer Pipe, 21" | 0 | LF | $140.00 | $0 |
| 8. Sewer Pipe, 24" | 0 | LF | $150.00 | $0 |
| 9. Service | 0 | EA | $500.00 | $0 |
| | **Subtotal** | | | **$161,860** |
| | 35% Contingency | | | $56,651 |
| | Subtotal | | | $218,511 |
| | 15% Engineering | | | $32,777 |
| | 10% Construction Management | | | $21,851 |
| **SEWER SYSTEM SUBTOTAL** | | | | **$273,139** |

# DRAINAGE SYSTEM COSTS - SHED 151 EAST

| | DESCRIPTION | QUANTITY | UNIT OF MEASURE | UNIT PRICE | AMOUNT |
|---|---|---|---|---|---|
| **C. DRAINGE SYSTEM** | | | | | |
| 1. | Storm Drain Pipe, 18" | 0 | LF | $96.00 | $0 |
| 2. | Storm Drain Pipe, 24" | 0 | LF | $130.00 | $0 |
| 3. | Storm Drain Pipe, 30" | 129 | LF | $160.00 | $20,640 |
| 4. | Storm Drain Pipe, 36" | 0 | LF | $195.00 | $0 |
| 5. | Storm Drain Pipe, 48" | 0 | LF | $265.00 | $0 |
| 6. | Storm Drain Pipe, 54" | 0 | LF | $310.00 | $0 |
| 7. | Storm Drain Pipe, 60" | 0 | LF | $350.00 | $0 |
| 8. | Storm Drain Pipe, 66" | 3,110 | LF | $395.00 | $1,228,450 |
| 9. | Storm Drain Pipe, 72" | 0 | LF | $435.00 | $0 |
| 10. | Manhole, 12"-24" | 0 | EA | $3,200.00 | $0 |
| 11. | Manhole, 30"-36" | 0 | EA | $3,175.00 | $0 |
| 12. | Manhole, 42"-48" | 1 | EA | $3,800.00 | $3,800 |
| 13. | Manhole, 54"-60" | 0 | EA | $4,150.00 | $0 |
| 14. | Manhole, 66"-72" | 10 | EA | $4,650.00 | $46,500 |
| 15. | Detention Basin Improvements Northern West Basin | 0 | EA | $1,415,500.00 | $0 |
| 16. | Detention Basin Improvements Southern West Basin | 0 | EA | $1,158,541.88 | $0 |
| 17. | Detention Basin Improvements East Basin | 1 | EA | $2,057,000.00 | $2,057,000 |
| 18. | Flood Proofing (House) | 0 | EA | $39,500.00 | $0 |
| 19. | Flood Proofing (Building) | 0 | EA | $78,900.00 | $0 |
| | | **Subtotal** | | | **$3,356,390** |
| | | 35% Contingency | | | $1,174,737 |
| | | Subtotal | | | $4,531,127 |
| | | 15% Engineering | | | $679,669 |
| | | 10% Construction Management | | | $453,113 |
| | **TOTAL STORM DRAIN SHED 151 EAST** | | | | **$5,663,908** |

Unit prices derived by applying the McGraw-Hill Construction ENR (July, 2010 - 8,865, 1996 - 5620) to the City of Sacramento's 1996 sump 151 Storm Drain Master Plan.

# WATER DISTRIBUTION SYSTEM COSTS

| | DESCRIPTION | QUANTITY | UNIT OF MEASURE | UNIT PRICE | AMOUNT |
|---|---|---|---|---|---|
| **D.1 WATER DISTRIBUTION SYSTEM - CATALYST SITES** | | | | | |
| 1. | Water, 8" (Incl. fittings) | 2,427 | LF | $100.00 | $242,700 |
| 2. | Fire Hydrant | 8 | EA | $5,000.00 | $40,000 |
| | | **Subtotal** | | | $282,700 |
| | | 35% Contingency | | | $98,945 |
| | | Subtotal and Contingency | | | $381,645 |
| | | 15% Engineering | | | $57,247 |
| | | 10% Construction Management | | | $38,165 |
| | Total Water Distribution System - Catalyst Sites | | | | **$477,056** |
| **D.2 WATER DISTRIBUTION SYSTEM - TIER II** | | | | | |
| 1. | Water, 8" (Incl. fittings) | 1,760 | LF | $100.00 | $176,000 |
| 2. | Fire Hydrant | 6 | EA | $5,000.00 | $30,000 |
| | | **Subtotal** | | | $206,000 |
| | | 35% Contingency | | | $72,100 |
| | | Subtotal and Contingency | | | $278,100 |
| | | 15% Engineering | | | $41,715 |
| | | 10% Construction Management | | | $27,810 |
| | Total Water Distribution System - Tier II Sites | | | | **$347,625** |
| | **TOTAL WATER DISTRIBUTION SYSTEM** | | | | **$824,681** |

# APPENDIX A

# LAND USE CALCULATIONS

# APPENDIX A – LAND USE CALCULATIONS

## Table A-1
## Proposed Land Use Development Intensity

| | Total Developable Area (Acres) | Residential (Dwelling Units) | | Non-Residential (Acres) | | Non-Residential (Square Feet) | |
|---|---|---|---|---|---|---|---|
| | | *Low* | *High* | *Low* | *High* | *Low* | *High* |
| **Globe Station** | | | | | | | |
| Development Intensity A | 5.55 | 222 | 333 | 1.67 | 2.22 | 72,567 | 96,756 |
| Development Intensity B | 6.89 | 276 | 413 | 0.00 | 0.00 | 0 | 0 |
| Development Intensity C | 9.66 | 242 | 387 | 0.00 | 0.00 | 0 | 0 |
| Development Intensity D | | | | | | | |
| Development Intensity E | | | | | | | |
| **Total for Globe Station** | 22.11 | 739 | **1,133** | 1.67 | 2.22 | 72,567 | **96,756** |
| **Del Paso - Arden Station** | | | | | | | |
| Development Intensity A | 5.34 | 214 | 320 | 1.60 | 2.14 | 69,763 | 93,017 |
| Development Intensity B | | | | | | | |
| Development Intensity C | 4.06 | 102 | 162 | 0.00 | 0.00 | 0 | 0 |
| Development Intensity D | 1.70 | 25 | 42 | 0.76 | 1.02 | 33,294 | 44,392 |
| Development Intensity E | | | | | | | |
| **Total for Del Paso/Arden Station** | 11.10 | 341 | **525** | 2.37 | 3.15 | 103,057 | **137,409** |
| **Royal Oaks Station** | | | | | | | |
| Development Intensity A | | | | | | | |
| Development Intensity B | 27.69 | 1,107 | 1,661 | 0.00 | 0.00 | 0 | 0 |
| Development Intensity C | 3.39 | 85 | 136 | 0.00 | 0.00 | 0 | 0 |
| Development Intensity D | | | | | | | |
| Development Intensity E | 13.13 | 328 | 525 | 3.94 | 5.25 | 171,579 | 228,772 |
| **Total for Royal Oaks Station** | 44.21 | 1,521 | **2,322** | 3.94 | 5.25 | 171,579 | **228,772** |
| **Total For All Stations** | 77.41 | 2,600 | **3,980** | 7.97 | 10.63 | 347,203 | **462,937** |

# Globe Station

| AREA (SQ FT) | AREA (ACS) | APN | LANDUSE_DE | ZONE | Dev_Type | Res_Low | Res_High | NonRes_Low | NonRes_High | NonRes_Low | NonRes_High |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3706.26371 | 0.085 | 275-0161-008 | SMALL RETAIL | C-2-SPD | A | 3 | 5 | 0.026 | 0.034 | 1112 | 1483 |
| 11199.10269 | 0.257 | 275-0161-007 | LIGHT INDUSTRIAL | C-2-SPD | A | 10 | 15 | 0.077 | 0.103 | 3360 | 4480 |
| 26674.88007 | 0.612 | 275-0260-008 | SMALL RETAIL | C-2 | A | 24 | 37 | 0.184 | 0.245 | 8002 | 10670 |
| 10754.79895 | 0.247 | 275-0165-018 | | C-2-SPD | A | 10 | 15 | 0.074 | 0.099 | 3226 | 4302 |
| 12508.50801 | 0.287 | 275-0161-014 | HEAVY INDUSTRIAL | C-2-SPD | A | 11 | 17 | 0.086 | 0.115 | 3753 | 5003 |
| 14989.85393 | 0.344 | 275-0163-006 | CEMETARY/MORTUARY | C-2-SPD | A | 14 | 21 | 0.103 | 0.138 | 4497 | 5996 |
| 7526.52037 | 0.173 | 275-0162-001 | VACANT/OFFICE | C-2-SPD | A | 7 | 10 | 0.052 | 0.069 | 2258 | 3011 |
| 15093.71871 | 0.347 | 275-0162-004 | VETERINARIAN | C-2-SPD | A | 14 | 21 | 0.104 | 0.139 | 4528 | 6037 |
| 9168.49491 | 0.210 | 275-0165-003 | | C-2-SPD | A | 8 | 13 | 0.063 | 0.084 | 2751 | 3667 |
| 5098.83856 | 0.117 | 275-0163-002 | LOW RISE APARTMENT < 4 STORIES | C-2-SPD | A | 5 | 7 | 0.035 | 0.047 | 1530 | 2040 |
| 7304.59349 | 0.168 | 275-0164-013 | LIGHT INDUSTRIAL | C-2-SPD | A | 7 | 10 | 0.050 | 0.067 | 2191 | 2922 |
| 10050.71992 | 0.231 | 275-0163-001 | VACANT/RETAIL | C-2-SPD | A | 9 | 14 | 0.069 | 0.092 | 3015 | 4020 |
| 14794.43068 | 0.340 | 275-0163-003 | VACANT/OFFICE | C-2-SPD | A | 14 | 20 | 0.102 | 0.136 | 4438 | 5918 |
| 7527.97401 | 0.173 | 275-0163-005 | | C-2-SPD | A | 7 | 10 | 0.052 | 0.069 | 2258 | 3011 |
| 7533.13738 | 0.173 | 275-0165-002 | | C-2-SPD | A | 7 | 10 | 0.052 | 0.069 | 2260 | 3013 |
| 7606.94303 | 0.175 | 275-0163-004 | VACANT/OFFICE | C-2-SPD | A | 7 | 10 | 0.052 | 0.070 | 2282 | 3043 |
| 18531.29888 | 0.425 | 275-0165-019 | PARKING LOT | C-2-SPD | A | 17 | 26 | 0.128 | 0.170 | 5559 | 7413 |
| 6621.93193 | 0.152 | 275-0161-013 | LIGHT INDUSTRIAL | C-2-SPD | A | 6 | 9 | 0.046 | 0.061 | 1987 | 2649 |
| 7256.27135 | 0.167 | 275-0164-014 | LIGHT INDUSTRIAL | C-2-SPD | A | 7 | 10 | 0.050 | 0.067 | 2177 | 2903 |
| 603.60259 | 0.014 | 275-0165-017 | | C-2 | A | 1 | 1 | 0.004 | 0.006 | 181 | 241 |
| 7568.00765 | 0.174 | 275-0122-008 | VACANT/RETAIL | C-2-SPD | A | 7 | 10 | 0.052 | 0.069 | 2270 | 3027 |
| 22346.51844 | 0.513 | 275-0165-016 | SMALL RETAIL | C-2-SPD | A | 21 | 31 | 0.154 | 0.205 | 6704 | 8939 |
| 7422.50529 | 0.170 | 275-0122-007 | VACANT/RETAIL | C-2-SPD | A | 7 | 10 | 0.051 | 0.068 | 2227 | 2969 |
| 246916.43919 | 5.668 | 275-0111-006 | | M-1-SPD | B | 227 | 340 | | | | |
| 8029.47329 | 0.184 | 275-0161-016 | VACANT/INDUSTRIAL | M-1-SPD | B | 7 | 11 | | | | |
| 7449.57396 | 0.171 | 275-0164-002 | LIGHT INDUSTRIAL | C-2-SPD | B | 7 | 10 | | | | |
| 7617.04243 | 0.175 | 275-0161-017 | VACANT/INDUSTRIAL | M-1-SPD | B | 7 | 10 | | | | |
| 7406.16140 | 0.170 | 275-0161-004 | VACANT/RECREATIONAL | M-1-SPD | B | 7 | 10 | | | | |
| 7378.88234 | 0.169 | 275-0161-006 | RESIDENTIAL/SINGFAM/SUBDIV | M-1-SPD | B | 7 | 10 | | | | |
| 7371.64339 | 0.169 | 275-0164-001 | LIGHT INDUSTRIAL | C-2-SPD | B | 7 | 10 | | | | |
| 7852.60653 | 0.180 | 275-0122-004 | VACANT/OFFICE | C-2-SPD | B | 7 | 11 | | | | |
| 5379.77286 | 0.124 | 275-0121-002 | VACANT/RESIDENTIAL | C-2-SPD | C | 3 | 5 | | | | |
| 3343.54527 | 0.077 | 275-0113-010 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | C | 2 | 3 | | | | |
| 21707.96949 | 0.498 | 275-0114-015 | VACANT/RETAIL | C-2-SPD | C | 12 | 20 | | | | |
| 4435.26015 | 0.102 | 275-0113-012 | RESIDENTIAL/FOURPLEX | C-2-SPD | C | 3 | 4 | | | | |
| 7212.03949 | 0.166 | 275-0114-006 | VACANT/RETAIL | C-2-SPD | C | 4 | 7 | | | | |
| 7059.86940 | 0.162 | 275-0113-004 | HEAVY INDUSTRIAL | C-2-SPD | C | 4 | 6 | | | | |
| 9296.62141 | 0.213 | 275-0112-027 | LIGHT INDUSTRIAL | M-1-SPD | C | 5 | 9 | | | | |
| 9494.73286 | 0.218 | 275-0114-013 | LIGHT INDUSTRIAL | C-2-SPD | C | 5 | 9 | | | | |
| 6751.09303 | 0.155 | 275-0113-015 | VACANT/RECREATIONAL | M-1-SPD | C | 4 | 6 | | | | |
| 7454.36355 | 0.171 | 275-0163-007 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | C | 4 | 7 | | | | |
| 6307.29539 | 0.145 | 275-0121-001 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | C | 4 | 6 | | | | |
| 42756.04344 | 0.982 | 275-0112-001 | VACANT/INDUSTRIAL | M-1-SPD | C | 25 | 39 | | | | |
| 7108.21423 | 0.163 | 275-0112-017 | LIGHT INDUSTRIAL | M-1-SPD | C | 4 | 7 | | | | |
| 10168.77658 | 0.233 | 275-0113-023 | RESIDENTIAL/SINGFAM/NONSUB | C-2-SPD | C | 6 | 9 | | | | |
| 3510.46015 | 0.081 | 275-0113-013 | VACANT/RECREATIONAL | M-1-SPD | C | 2 | 3 | | | | |
| 4298.67769 | 0.099 | 275-0113-014 | VACANT/RECREATIONAL | M-1-SPD | C | 2 | 4 | | | | |
| 7486.40286 | 0.172 | 275-0113-003 | HEAVY INDUSTRIAL | C-2-SPD | C | 4 | 7 | | | | |
| 7041.35668 | 0.162 | 275-0114-005 | VACANT/RETAIL | C-2-SPD | C | 4 | 6 | | | | |
| 7118.10622 | 0.163 | 275-0113-005 | HEAVY INDUSTRIAL | C-2-SPD | C | 4 | 7 | | | | |
| 6645.73737 | 0.153 | 275-0112-007 | LIGHT INDUSTRIAL | M-1-SPD | C | 4 | 6 | | | | |
| 10242.45544 | 0.235 | 275-0113-024 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | C | 6 | 9 | | | | |
| 13424.83972 | 0.308 | 275-0112-005 | VACANT/INDUSTRIAL | M-1-SPD | C | 8 | 12 | | | | |
| 10597.17432 | 0.243 | 275-0112-026 | LIGHT INDUSTRIAL | M-1-SPD | C | 6 | 10 | | | | |
| 6848.42017 | 0.157 | 275-0121-003 | CITY | C-2-SPD | C | 4 | 6 | | | | |
| 10037.81656 | 0.230 | 275-0114-014 | VACANT/INDUSTRIAL | C-2-SPD | C | 6 | 9 | | | | |
| 7119.03007 | 0.163 | 275-0113-011 | RESIDENTIAL/DUPLEX | C-2-SPD | C | 4 | 7 | | | | |
| 8912.89822 | 0.205 | 275-0112-011 | LIGHT INDUSTRIAL | M-1-SPD | C | 5 | 8 | | | | |
| 6738.71376 | 0.155 | 275-0112-002 | LIGHT INDUSTRIAL | M-1-SPD | C | 4 | 6 | | | | |
| 7604.66902 | 0.175 | 275-0163-009 | VACANT/RESIDENTIAL | R-1 | C | 4 | 7 | | | | |
| 6992.89030 | 0.161 | 275-0112-015 | HEAVY INDUSTRIAL | M-1-SPD | C | 4 | 6 | | | | |
| 8758.77745 | 0.201 | 275-0114-007 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | C | 5 | 8 | | | | |
| 6569.20436 | 0.151 | 275-0112-004 | LIGHT INDUSTRIAL | M-1-SPD | C | 4 | 6 | | | | |
| 6473.26218 | 0.149 | 275-0112-008 | RESIDENTIAL/SINGFAM/SUBDIV | M-1-SPD | C | 4 | 6 | | | | |
| 6694.47535 | 0.154 | 275-0112-003 | LIGHT INDUSTRIAL | M-1-SPD | C | 4 | 6 | | | | |
| 6498.42533 | 0.149 | 275-0112-006 | VACANT/RECREATIONAL | M-1-SPD | C | 4 | 6 | | | | |
| 6845.83050 | 0.157 | 275-0113-016 | HEAVY INDUSTRIAL | M-1-SPD | C | 4 | 6 | | | | |
| 6946.31092 | 0.159 | 275-0112-020 | HEAVY INDUSTRIAL | M-1-SPD | C | 4 | 6 | | | | |
| 53371.06382 | 1.225 | 275-0113-022 | LIGHT INDUSTRIAL | M-1-SPD | C | 31 | 49 | | | | |
| 4713.01176 | 0.108 | 275-0112-009 | RESIDENTIAL/SINGFAM/SUBDIV | M-1-SPD | C | 3 | 4 | | | | |
| 7219.26005 | 0.166 | 275-0114-004 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | C | 4 | 7 | | | | |
| 4633.30714 | 0.106 | 275-0112-010 | LIGHT INDUSTRIAL | M-1-SPD | C | 3 | 4 | | | | |
| 7036.13136 | 0.162 | 275-0112-021 | HEAVY INDUSTRIAL | M-1-SPD | C | 4 | 6 | | | | |
| 22133.27586 | 0.508 | 275-0112-025 | LIGHT INDUSTRIAL | M-1-SPD | C | 13 | 20 | | | | |
| | *22.10510* | | | | | *739* | *1133* | *1.7* | *2.2* | *72566.7* | *96755.6* |

# Del Paso / Arden Station

| AREA | AREA (ACS) | APN | LANDUSE_DE | ZONE | Dev_Type | Res_Low | Res_High | NonRes_Low | NonRes_High | NonRes_Low | NonRes_High |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 46241.36821 | 1.06 | 275-0134-008 | CITY | R-1 | A | 42 | 64 | 0.318 | 0.425 | 13872 | 18497 |
| 7790.11569 | 0.18 | 275-0124-009 | RESTAURANT | C-2-SPD | A | 7 | 11 | 0.054 | 0.072 | 2337 | 3116 |
| 614.33386 | 0.01 | 275-0134-007 | CITY | R-1 | A | 1 | 1 | 0.004 | 0.006 | 184 | 246 |
| 15458.50131 | 0.35 | 275-0125-028 | VACANT/OFFICE | C-2-SPD | A | 14 | 21 | 0.106 | 0.142 | 4638 | 6183 |
| 7394.34622 | 0.17 | 275-0125-001 | VACANT/OFFICE | C-2-SPD | A | 7 | 10 | 0.051 | 0.068 | 2218 | 2958 |
| 695.35928 | 0.02 | 275-0134-006 | CITY | R-1 | A | 1 | 1 | 0.005 | 0.006 | 209 | 278 |
| 18577.48239 | 0.43 | 275-0134-003 | CITY | R-1 | A | 17 | 26 | 0.128 | 0.171 | 5573 | 7431 |
| 24196.07864 | 0.56 | 275-0134-010 | CITY | R-1 | A | 22 | 33 | 0.167 | 0.222 | 7259 | 9678 |
| 7699.67567 | 0.18 | 275-0093-005 | SMALL RETAIL | C-2-SPD | A | 7 | 11 | 0.053 | 0.071 | 2310 | 3080 |
| 7024.02676 | 0.16 | 275-0093-004 | SMALL RETAIL | C-2-SPD | A | 6 | 10 | 0.048 | 0.064 | 2107 | 2810 |
| 6059.36712 | 0.14 | 275-0095-016 | SMALL RETAIL | C-2-SPD | A | 6 | 8 | 0.042 | 0.056 | 1818 | 2424 |
| 1946.89661 | 0.04 | 275-0134-004 | CITY | R-1 | A | 2 | 3 | 0.013 | 0.018 | 584 | 779 |
| 49591.96653 | 1.14 | 275-0134-012 | CITY | R-1 | A | 46 | 68 | 0.342 | 0.455 | 14878 | 19837 |
| 3654.38386 | 0.08 | 275-0134-011 | CITY | R-1 | A | 3 | 5 | 0.025 | 0.034 | 1096 | 1462 |
| 27839.70489 | 0.64 | 275-0125-029 | RESTAURANT | C-2-SPD | A | 26 | 38 | 0.192 | 0.256 | 8352 | 11136 |
| 7759.33631 | 0.18 | 275-0124-010 | RESTAURANT | C-2-SPD | A | 7 | 11 | 0.053 | 0.071 | 2328 | 3104 |
| 75384.48272 | 1.73 | 275-0085-013 | VACANT/RESIDENTIAL | C-2 | C | 43 | 69 | | | | |
| 4167.59998 | 0.10 | 275-0084-016 | VACANT/RETAIL | C-2-SPD | C | 2 | 4 | | | | |
| 6494.04387 | 0.15 | 275-0095-007 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | C | 4 | 6 | | | | |
| 7685.36187 | 0.18 | 275-0125-023 | PARKING LOT | R-3 | C | 4 | 7 | | | | |
| 1057.25676 | 0.02 | 275-0082-001 | VACANT/RETAIL | C-2-SPD | C | 1 | 1 | | | | |
| 6502.17503 | 0.15 | 275-0145-012 | RESIDENTIAL/DUPLEX | R-1 | C | 4 | 6 | | | | |
| 4251.65894 | 0.10 | 275-0125-024 | PARKING LOT | R-3 | C | 2 | 4 | | | | |
| 6337.44124 | 0.15 | 275-0085-009 | VACANT/RESIDENTIAL | R-1 | C | 4 | 6 | | | | |
| 7573.76036 | 0.17 | 275-0125-022 | PARKING LOT | R-3 | C | 4 | 7 | | | | |
| 6317.06702 | 0.15 | 275-0085-010 | VACANT/RESIDENTIAL | R-1 | C | 4 | 6 | | | | |
| 6649.49630 | 0.15 | 275-0028-004 | VACANT/RESIDENTIAL | R-1 | C | 4 | 6 | | | | |
| 6519.86828 | 0.15 | 275-0145-013 | VACANT/RESIDENTIAL | R-1 | C | 4 | 6 | | | | |
| 10114.43233 | 0.23 | 275-0091-001 | VACANT/RETAIL | R-1 | C | 6 | 9 | | | | |
| 6459.11745 | 0.15 | 275-0085-011 | VACANT/RESIDENTIAL | R-1 | C | 4 | 6 | | | | |
| 21353.05374 | 0.49 | 275-0125-016 | LOW RISE APARTMENT < 4 STORIES | R-3 | C | 12 | 20 | | | | |
| 6132.34581 | 0.14 | 275-0131-014 | OFFICE GENERAL | C-2-SPD | D | 2 | 4 | 0.063 | 0.084 | 2760 | 3679 |
| 9591.12809 | 0.22 | 275-0131-020 | SERVICE STATION | C-2-SPD | D | 3 | 6 | 0.099 | 0.132 | 4316 | 5755 |
| 1665.19067 | 0.04 | 275-0131-008 | NO USE | C-2-SPD | D | 1 | 1 | 0.017 | 0.023 | 749 | 999 |
| 5720.36923 | 0.13 | 275-0131-009 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | D | 2 | 3 | 0.059 | 0.079 | 2574 | 3432 |
| 6036.53224 | 0.14 | 275-0131-017 | LIGHT INDUSTRIAL | C-2-SPD | D | 2 | 3 | 0.062 | 0.083 | 2716 | 3622 |
| 7659.94704 | 0.18 | 275-0131-007 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | D | 3 | 4 | 0.079 | 0.106 | 3447 | 4596 |
| 7146.04615 | 0.16 | 275-0131-011 | RESIDENTIAL CONVERION TO OFFICE | C-2-SPD | D | 2 | 4 | 0.074 | 0.098 | 3216 | 4288 |
| 7454.07982 | 0.17 | 275-0131-010 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | D | 3 | 4 | 0.077 | 0.103 | 3354 | 4472 |
| 7499.94778 | 0.17 | 275-0131-013 | | C-2-SPD | D | 3 | 4 | 0.077 | 0.103 | 3375 | 4500 |
| 7631.19020 | 0.18 | 275-0131-016 | SMALL RETAIL | C-2-SPD | D | 3 | 4 | 0.079 | 0.105 | 3434 | 4579 |
| 7449.56573 | 0.17 | 275-0131-012 | RESIDENTIAL/SINGFAM/SUBDIV | C-2-SPD | D | 3 | 4 | 0.077 | 0.103 | 3352 | 4470 |
| | 11.09725 | | | | | *341* | *525* | *2.4* | *3.2* | *103056.7* | *137409.0* |

# Royal Oaks Station

| APN | LANDUSE_DESIGNATION | ZONE | Dev_Type | Res_Low | Res_High | NonRes_Low | NonRes_High | NonRes_L | NonRes_High |
|---|---|---|---|---|---|---|---|---|---|
| 275-0240-092 | OFFICE LARGE SINGLE TENANT | OB-LI | B | 125 | 188 | | | | |
| 275-0240-088 | STATE | OB-LI | B | 20 | 31 | | | | |
| 277-0144-022 | STATE | M-1-LI | B | 89 | 133 | | | | |
| 275-0240-087 | STATE | OB-LI | B | 225 | 337 | | | | |
| 277-0134-023 | LARGE RETAIL | M-1 | B | 19 | 29 | | | | |
| 275-0240-074 | LARGE RETAIL | OB-LI | B | 70 | 105 | | | | |
| 275-0240-094 | HEAVY INDUSTRIAL | OB-LI | B | 56 | 83 | | | | |
| 275-0240-089 | STATE | OB-LI | B | 42 | 63 | | | | |
| 275-0240-045 | POST OFFICE | OB-LI | B | 101 | 152 | | | | |
| 277-0134-024 | SPECIAL DISTRICT | M-1 | B | 22 | 33 | | | | |
| 275-0240-052 | POST OFFICE | OB-LI | B | 91 | 137 | | | | |
| 275-0240-051 | STATE | OB-LI | B | 200 | 299 | | | | |
| 275-0240-029 | STATE | OB-LI | B | 47 | 71 | | | | |
| 277-0132-006 | HEAVY INDUSTRIAL | M-1 | C | 3 | 4 | | | | |
| 277-0131-012 | LOW RISE APARTMENT < 4 STORIES | R-1 | C | 4 | 6 | | | | |
| 277-0133-006 | INDUSTRIAL/MULTI-TENANT | M-1 | C | 5 | 9 | | | | |
| 277-0133-002 | RESIDENTIAL/SINGFAM/SUBDIV | M-1 | C | 3 | 4 | | | | |
| 277-0133-008 | INDUSTRIAL/MULTI-TENANT | M-1 | C | 3 | 5 | | | | |
| 277-0073-009 | VACANT/INDUSTRIAL | M-1 | C | 39 | 62 | | | | |
| 275-0104-023 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | C | 3 | 5 | | | | |
| 275-0104-024 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | C | 3 | 5 | | | | |
| 277-0133-003 | INDUSTRIAL/MULTI-TENANT | M-1 | C | 4 | 7 | | | | |
| 277-0132-005 | HEAVY INDUSTRIAL | M-1 | C | 3 | 4 | | | | |
| 277-0072-027 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | C | 4 | 6 | | | | |
| 277-0071-008 | VACANT/RESIDENTIAL | R-1 | C | 4 | 6 | | | | |
| 277-0131-002 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | C | 4 | 6 | | | | |
| 277-0072-026 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | C | 4 | 6 | | | | |
| 277-0134-021 | SERVICE STATION | M-1 | E | 12 | 20 | 0.149 | 0.199 | 6510 | 8679 |
| 275-0240-071 | OFFICE GENERAL | OB-R | E | 1 | 2 | 0.018 | 0.023 | 765 | 1021 |
| 275-0240-090 | OFFICE LARGE SINGLE TENANT | OB-LI | E | 41 | 66 | 0.495 | 0.661 | 21582 | 28776 |
| 277-0134-004 | LARGE RETAIL | M-1 | E | 18 | 28 | 0.211 | 0.281 | 9173 | 12231 |
| 277-0131-007 | LIGHT INDUSTRIAL | C-2 | E | 3 | 5 | 0.039 | 0.052 | 1711 | 2281 |
| 275-0155-005 | VACANT/RESIDENTIAL | R-1 | E | 4 | 6 | 0.045 | 0.060 | 1957 | 2610 |
| 277-0131-017 | VACANT/RESIDENTIAL | R-1 | E | 4 | 6 | 0.048 | 0.065 | 2109 | 2812 |
| 275-0155-013 | OFFICE GENERAL | C-2 | E | 8 | 12 | 0.091 | 0.122 | 3975 | 5300 |
| 277-0132-011 | LIGHT INDUSTRIAL | M-1 | E | 12 | 19 | 0.139 | 0.185 | 6047 | 8063 |
| 277-0134-005 | LARGE RETAIL | M-1 | E | 23 | 36 | 0.271 | 0.361 | 11805 | 15740 |
| 275-0240-072 | OFFICE GENERAL | OB-LI | E | 76 | 122 | 0.913 | 1.217 | 39756 | 53008 |
| 275-0155-004 | VACANT/RESIDENTIAL | R-1 | E | 4 | 6 | 0.046 | 0.061 | 1993 | 2657 |
| 277-0134-003 | LARGE RETAIL | M-1 | E | 30 | 48 | 0.364 | 0.485 | 15835 | 21113 |
| 277-0133-005 | | M-1 | E | 27 | 44 | 0.328 | 0.438 | 14297 | 19063 |
| 277-0131-016 | VACANT/RESIDENTIAL | R-1 | E | 4 | 6 | 0.044 | 0.058 | 1899 | 2532 |
| 277-0134-020 | VACANT/RETAIL | M-1 | E | 6 | 9 | 0.068 | 0.090 | 2952 | 3936 |
| 275-0155-006 | USED CAR SALES | R-1 | E | 3 | 5 | 0.040 | 0.054 | 1759 | 2346 |
| 275-0155-007 | VACANT/RETAIL | C-2 | E | 3 | 5 | 0.041 | 0.055 | 1781 | 2374 |
| 277-0132-009 | LIGHT INDUSTRIAL | M-1 | E | 18 | 29 | 0.214 | 0.286 | 9331 | 12442 |
| 275-0240-070 | OFFICE GENERAL | OB-R | E | 15 | 25 | 0.185 | 0.246 | 8043 | 10723 |
| 277-0131-005 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | E | 4 | 6 | 0.047 | 0.063 | 2069 | 2758 |
| 277-0131-006 | RESIDENTIAL/SINGFAM/SUBDIV | R-1 | E | 4 | 6 | 0.044 | 0.059 | 1918 | 2558 |
| 275-0240-076 | SPECIAL DISTRICT | OB-LI | E | 5 | 8 | 0.060 | 0.080 | 2608 | 3477 |
| 277-0131-008 | RESTAURANT | C-2 | E | 3 | 5 | 0.039 | 0.052 | 1704 | 2272 |
| | | | | *1521* | *2322* | *3.9* | *5.3* | *171579* | *228772* |

# Assumptions

| | FAR | | DU/AC | |
|---|---|---|---|---|
| | Low | High | Low | High |
| A | 0.3 | 0.4 | 40 | 60 |
| B | x | x | 40 | 60 |
| C | x | x | 25 | 40 |
| D | 0.45 | 0.6 | 15 | 25 |
| E | 0.3 | 0.4 | 25 | 40 |