Appendix D

Civil Engineering Reports

JORDAN DOWNS COMMUNITY – BASED REDEVELOPMENT

BETWEEN GRAPE STREET & SOUTH ALAMEDA STREET BETWEEN EAST 97TH STREET & EAST 103RD STREET LOS ANGELES, CA

DEVELOPMENT MASTER PLAN
ENVIRONMENTAL IMPACT OUTLINE REPORT

Project No. LA30111

February 2, 2010

Prepared For:

Housing Authority of the City of Los Angeles, Development Services Department
2600 Wilshire Boulevard
Los Angeles, CA 90057

Prepared by:

707 Wilshire Blvd, 40th Floor
Los Angeles, CA 90017

DRAFT

Table of Contents

DRAFT

DRAFT

Introduction

The purpose of this report is to address, in an outline format, the potential environmental impacts of the proposed project from a hydrological standpoint and how the proposed improvements may impact the existing infrastructure. Each section of this report describes existing conditions of the project site and explores what impacts, if any, the proposed improvements will have according to thresholds established by the City of Los Angeles. Each section further describes what measures are being considered to reduce or minimize any adverse environmental impacts identified. Finally, the sections of this report also address the expected results of the mitigation measures.

Project Description

Project Vision
The project vision is to create a vibrant urban village that is connected to the regional economy which incorporates a one-for-one replacement of public housing layered with a human capital plan. This redevelopment will serve as the catalyst for economic revitalization of Watts.

Project Goals
- Create a green/sustainable, vibrant urban village
- Attract neighbors with mixed income and ethnicities
- Convenient access to transit corridors
- Quality housing
- Enhanced educational opportunities
- Access to jobs & supportive services

Keys to Achieving Vision & Goals
- Intergenerational housing
- Integrated workforce housing
- Affordable multi-family rentals
- Safe pedestrian friendly environment
- Active and passive open spaces
- Accessible public transit

The Site
The project site is bounded by 97th Street to the north, 103rd Street to the south, Alameda Street to the east and Grape Street to the west. The Alameda street right-of-way includes the sunken Alameda railroad corridor. The site area is approximately 102.5 acres, plus site perimeter street infrastructure planned for improvements. Most of the site is in the City of Los Angeles. Approximately 31 acres of the site are in unincorporated LA County; these lands are in the process of being annexed into the City of Los Angles. The annexation process, following the master planning phase, also includes an EIR. The 700 current public housing units are all in 2-story buildings, grouped to form either angled or perpendicular open courtyards on super blocks. The site includes a community center and recreation center with an informal outdoor play area. All parking is surface parking, on-street and off-street.

DRAFT

The Site Context and the Surrounding Neighborhood
The surrounding neighborhood is composed of a mix of residential and non-residential uses, including elementary, middle and high schools, churches, some retail, and some industrial properties. The residential buildings are generally 1-2 story single family houses or 1-2 story apartment buildings.

Current Land Ownership
HACLA is the dominant landowner within the project area, controlling approximately 71 acres. The LAUSD owns approximately 19 acres. Approximately 90% of the project area is owned by the HACLA or the LAUSD.

Jurisdictions
The Jordan Downs site is at a nexus of several different local jurisdictions, resulting from the complex annexation history of the City of Los Angeles. A 21-acre portion of the site within Los Angeles County is the subject of an annexation to the City. Other Los Angeles County parcels within the project area, along Alameda, may also be considered for annexation. On the east side of Alameda Street is the independent city of South Gate, while to the south is Lynwood. Each jurisdiction has its own police, fire and school districts adding to the complexities of serving the neighborhoods.

Preferred Alternative with 1,600-1,800 homes

The Proposed Project
The proposed master plan is organized around a new central park, connecting the north and south sections of the Jordan Downs community. At the heart of the plan is a new community building housing the Family Resource Center, home to HACLA programs and community services. The plan calls for the near-complete demolition and reconstruction of the public housing site, to include 1600-1800 new dwelling units to be built in a variety of residential building types, including townhouses and stacked flats in multiple and varied configurations. Community facilities include the Family Resource Center and a new gym, to be jointly used with Jordan High School. The plan includes up to 310,000 gsf of new commercial/retail space on 7-10 acres along Alameda, plus up to 20,000 gsf of community-serving retail and services in mixed-use buildings.

Proposed Land Use Program

Land Use	Area (approximate)*
Residential, including some parcels with mixed-use, ground floor retail potential	37 Acres
Community Facilities (community center, gymnasium)	1.5 Acres
Schools	18-21 Acres
Parks & Open Space	9 Acres
Urban Agriculture	2.5 Acres
Employment Land	15-18 Acres
Streetscape Infrastructure within Site Boundary (Public R.O.W.)	16.5 Acres
Streetscape Infrastructure adjacent to site perimeter (Public R.O.W.)	4 Acres
Total	**106.5 Acres**

*areas rounded to the nearest ½ acre

Urban Form
New buildings will range in height from 1-5 stories, and may include a limited number (up to 6) of 8-story buildings.

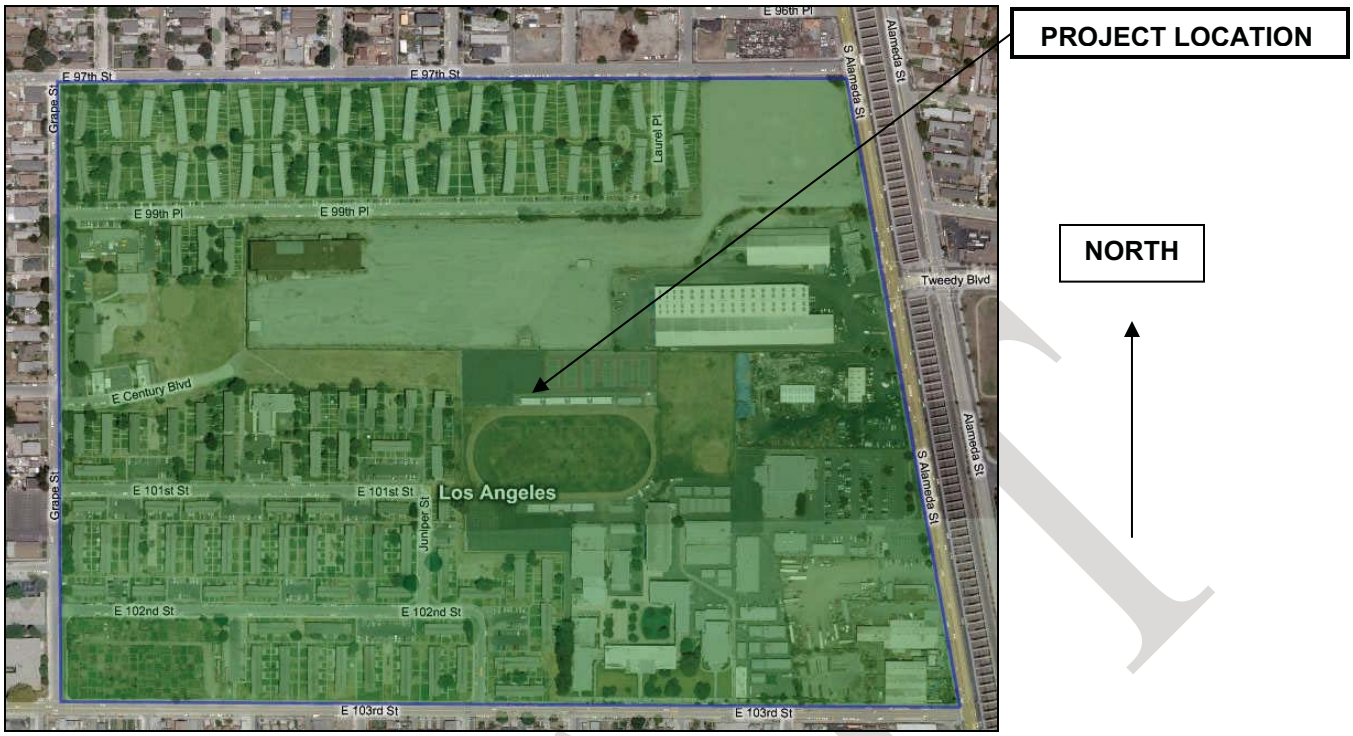
DRAFT

Parking
The plan calls for an average of 1.5 parking spaces per dwelling unit on-parcel. Parking is to be accommodated in a variety of conditions including limited surface parking in courts, private garages, and shared secured parking structures within residential blocks. Most streets have on-street parking on both sides for visitors.

Proposed Land Use Program Options
Option 1
This option includes a new elementary school, to be located on a 3-acre parcel between 97th and 99th Streets, just east of Croesus Avenue. In this alternative, the total number of residential dwelling units would remain the same, 1600-1800 units, redistributed more densely over the remaining 34 acres. The elementary school is planned for 550-650 students.
Option 2
This option includes a new high school, to be located immediately adjacent to Jordan High School to the southwest, on a 3-acre parcel along 103rd Street. The new high school is planned for 500-750 students, and would form part of an educational campus with Jordan High School that would share facilities, including sport fields. In this alternative, the total number of residential dwelling units would remain the same, 1600-1800 units, redistributed more densely over the remaining 34 acres.
Option 3
This option includes the new elementary school of Option 1 with the new high school of Option2. In this alternative, the total number of residential dwelling units would remain the same, 1600-1800 units, redistributed more densely over the remaining 31 acres, and would include a group of approximately 6-8 mid-high rise buildings, ranging from 8-16 stories.

Phasing
The project will be phased. The planned implementation period is 5-7 years, following predevelopment activities, which are planned for 18-36 months. The first phase, to be implemented on the vacant factory site, includes four key community redevelopment components: a community services building (Family Resource Center), an urban park, 7 acres reserved for employment land, and 350-400 new dwelling units. A new street connects Century Boulevard to Tweedy Boulevard. No relocation of residents or demolition of current homes are required for the implementation of the first phase. Phase 2 includes 350-400 dwelling units. Phase 3 includes 350-400 dwelling units. Phase 4 includes 550-600 dwelling units.

DRAFT


PROJECT LOCATION
NORTH
E 97th St
E 96th Pl
Alameda St
Grape St
Laurel Pl
E 99th Pl
Tweedy Blvd
E Century Blvd
S Alameda St
E 101st St
Juniper St
Los Angeles
E 102nd St
E 103rd St

DRAFT

JORDAN DOWNS COMMUNITY – BASED REDEVELOPMENT

Hydrology

The purpose of this section of the report is to determine and show the preliminary cumulative peak flows from the existing property and the cumulative peak flows from the proposed developed project. The preliminary hydrology calculations were done on preliminary information obtained from the Owner, the City of Los Angeles and the County of Los Angeles. These calculations will be verified at the final design stage.
Every effort has been made to perform a thorough and complete research of available information. Our research was limited to the information provided and available by the different public agencies.

The hydrology input data used herein is based on the "Los Angeles County Department of Public Works Hydrology Manual – January 2006." The site is found on 50-year 24-hour Isohyet Map No.1-H1.9-Los Angeles, taken from Los Angeles County's manual (see Appendix C). The site is located near the 5.8-inches of rainfall designation and lies in soil type 003 and 006. The runoff coefficient curve for soil type 003 and 006 is included in Appendix D. The Modified Rational Method (MODRAT), identified in the County's hydrology manual, was used to calculate the flow rates from the 0.75-inch, 25-year and 50-year design storms. The County employs a spreadsheet to calculate the Time of Concentration (Tc Calculator) which in turn is used in the MODRAT to calculate the runoff flow rate.

Existing Conditions

The property was divided by phases (see Phasing Plan in Hydrology Appendix) in order to calculate the total runoff rates and volumes. Currently, all runoff gravity flows into drainage inlets and catch basins distributed around the project site. Runoff entering the inlets is then conveyed through the storm drain system to the County of Los Angeles's storm drain main lines. Presently the stormwater is not treated prior to introduction to the City's storm drain system.

Table 1 – Hydrology Study Summary summarizes the total stormwater runoff rates and volumes from the 0.75-inchm, 25-year and 50-year design storms for the proposed site. The present site conditions do not address stormwater quality and quantity control nor is the volume of runoff from the 0.75-inch storm, or the "first flush" retained onsite. The proposed site will retain the first flush through measures discussed in the Surface Water Quality section of this technical report.

DRAFT

Significance Thresholds

The Project would have a significant impact if:

- It would cause flooding during the projected 50-year developed storm event, which would have the potential to harm people or damage property or sensitive biological resources;
- It would result in a permanent, adverse change to the movement of surface water sufficient to produce a substantial change in the current or direction of water flow;
- Future stormwater conveyance facilities are not designed or constructed per applicable City standards; or
- The Project Site is subject to inundation by 100-year floodwaters or other possible flood hazards.

Project Impacts

The proposed project will change the overall hydrology of the site. Flooding during the project 50-year development storm event, adverse change to the movement of surface water sufficient to produce a substantial change in the direction of water flow and inundation by 100-year floodwaters or other possible flood hazards are all possible outcomes if the proposed storm water conveyance system is not designed correctly. Sloping of ground surfaces, locations and number of drainage inlets, proper sizing and sloping of storm drain pipes and water treatment options selected will help to resolve all of the adverse impacts of the proposed project. Catch basins and catch basin filters will be located in low points in impervious areas within parking lots; other drainage inlets will be emplaced at other low points within highly impervious areas.

Higher volumes of stormwater runoff tend to be generated from new developments because of increased imperviousness. This has can have an adverse effect on receiving bodies of water by conveying more water than it is able to handle, harming any ecology or damaging any structures along the way. The site will incorporate measures to retain the first flush onsite.

Stormwater runoff pollution during and after construction is also addressed in the Surface Water Quality section of this technical report.

Mitigation Measures

The site will be designed to conform to current City of Los Angeles standards and will have a positive impact. Proper above ground design measures will be taken as well. Ground surface elevations will be designed so as to avoid steep slopes, while the location and number of inlets will be designed in order to increase the linear distance to the runoff; these measures increase the time of concentration, that is, runoff from the site will be exposed for a longer period of time allowing for infiltration and thus reducing the amount runoff generated onsite. Pervious areas such as landscape planters will be increased so as to contribute to the reduction of stormwater runoff as well. These landscape planters are designed in such a way that they function as infiltration pits. Runoff will gravity flow towards these planters which act as filters and allow for reintroduction of the runoff into the ground water supply.

Underground mitigation measures include retention or detention basins which depend on the underlying soil characteristics. Either type of basin will be designed to withhold onsite a volume of water thus

DRAFT

reducing the current amount of stormwater runoff. There are 4 potential locations for a retention or detention basin. (See Retention / Detention Basin Location Exhibit in Hydrology Appendix)

Mitigation measures are also discussed in the Surface Water Quality section of this report.

Impacts After Mitigation

Implementation of all or a combination of the measures discussed above will reduce runoff rates and quantities from the site. Due to the age of the project site, the existing conditions of the site were not designed in accordance with these considerations. The current city standards are more stringent and are designed to reduce the runoff rate. These lower rates will help to lower the volume the City of Los Angeles storm drain system will receive and reduce any harm to any downstream ecology.

Table 1 - Hydrology Study Summary

0.75-inch Design Storm	
Total Property Runoff Rate (cfs)	Total Property Runoff Volume (cf)
10.31	145,491
25-Year Design Storm	
Total Property Runoff Rate (cfs)	Total Property Runoff Volume (cf)
149.15	1,024,530
50-Year Design Storm	
Total Property Runoff Rate (cfs)	Total Property Runoff Volume (cf)
187.50	1,176,121

DRAFT

Cumulative Impacts

These projects will not be affected adversely due to the reduction in stormwater runoff rate and volume. Conversely, any effects felt from the runoff rates and volumes will be reduced by the onsite retention or detention of runoff volumes. The proposed improvements are being designed with the intent of improving the community by reducing downstream effects and also contribute to self-sustainability, as an underground basin could be modified to treat and re-use stormwater runoff for other purposes such as irrigation or sewer applications.

If the proposed project were not constructed then the projects near the site could be potentially harmed by repeated exposure to high runoff rates and volumes. The new project diminishes this possibility by mitigating a certain amount of runoff.

References

[1] California Stormwater Quality Association Construction Handbook. September 2004.

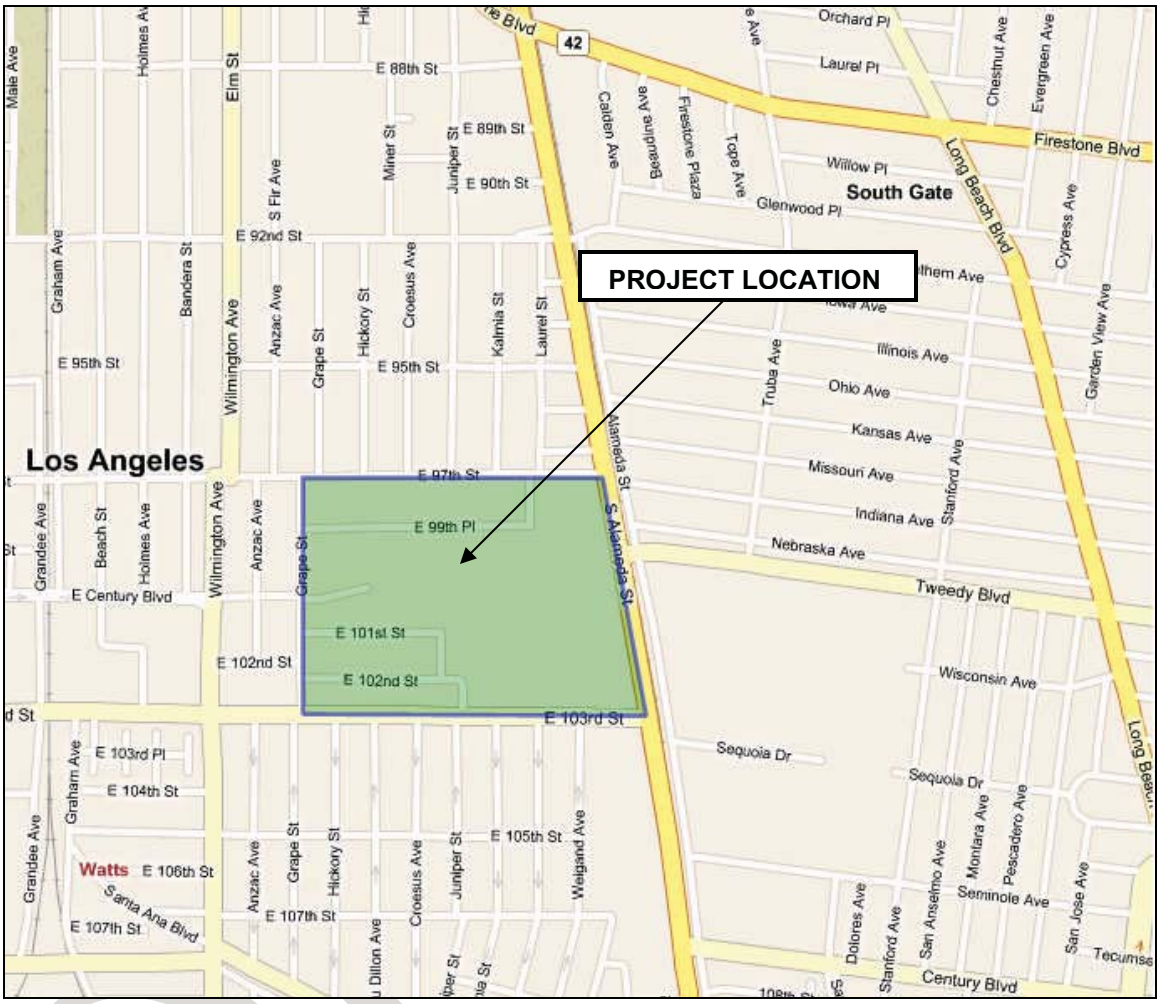
[2] Los Angeles County - A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP). September 2002.

Hydrology Appendix:

A) Vicinity Map
B) Site Plan
C) Los Angeles County Hydrologic Map 1-H1.9
D) Runoff Coefficient Curve – Soil Type 003 & 006
E) Hydrology Design Criteria
F) Hydrology Calculations
G) Phasing Plan
H) Retention / Detention Basin Locations Exhibit
I) City of LA Catch Basin Exhibit
J) County of LA Storm Drain Exhibit

DRAFT

Appendix A - Vicinity Map



VICINITY MAP
Thomas Guide
Page 704 H-4
Not to Scale

Appendix B – Site Plan

DRAFT

Jordan Downs Community-Based Redevelopment
Site Plan

Comunidad **Jordan Downs** Re-desarrollo

Appendix C – Los Angeles County Hydrologic Map

DRAFT


34° 00' 00"
LOS ANGELES 1-H1.19
-118° 15' 00"
PROJECT LOCATION
INGLEWOOD 1-H1.8
WHITTIER 1-H1.10
-118° 07' 30"
LONG BEACH 1-H1.5
33° 52' 30"
016
SOIL CLASSIFICATION AREA
7.2
INCHES OF RAINFALL
DPA - 6
DEBRIS POTENTIAL AREA
N
W
E
S
1 0 1 2 Miles
25-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.878
10-YEAR 24-HOUR ISOHYET REDUCTION FACTOR: 0.714
SOUTH GATE
50-YEAR 24-HOUR ISOHYET
1-H1.9
LOS ANGELES COUNTY PUBLIC WORKS
Public Service That Works

Appendix D – Runoff Coefficient Curve – Soil Type 003 & 006

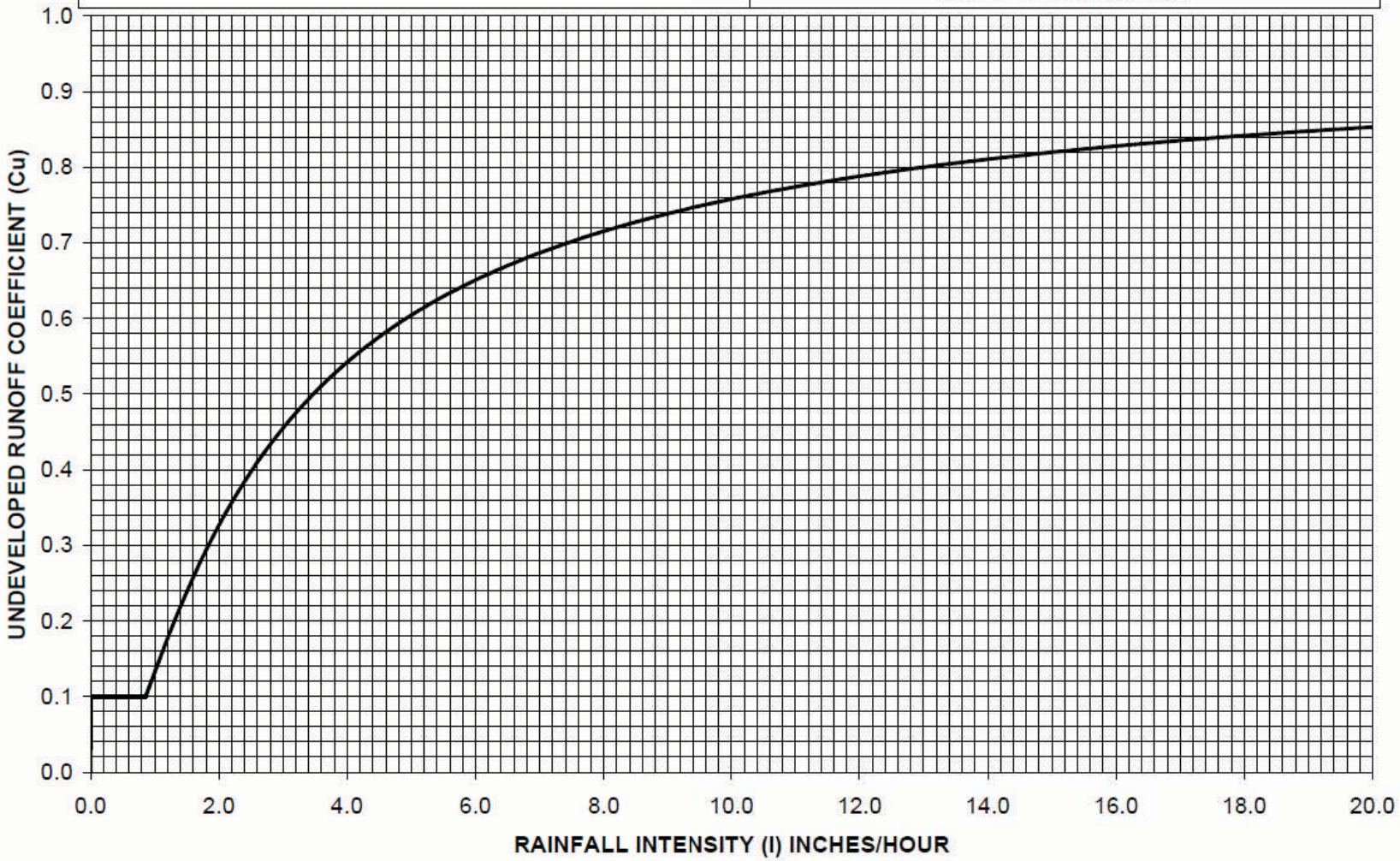
DRAFT

$C_D = (0.9 * IMP) + (1.0 - IMP) * C_U$

Where: C_D = Developed Runoff Coefficient
IMP = Proportion Impervious
C_U = Undeveloped runoff coefficient

Los Angeles County Department of Public Works

RUNOFF COEFFICIENT CURVE
SOIL TYPE NO. 003



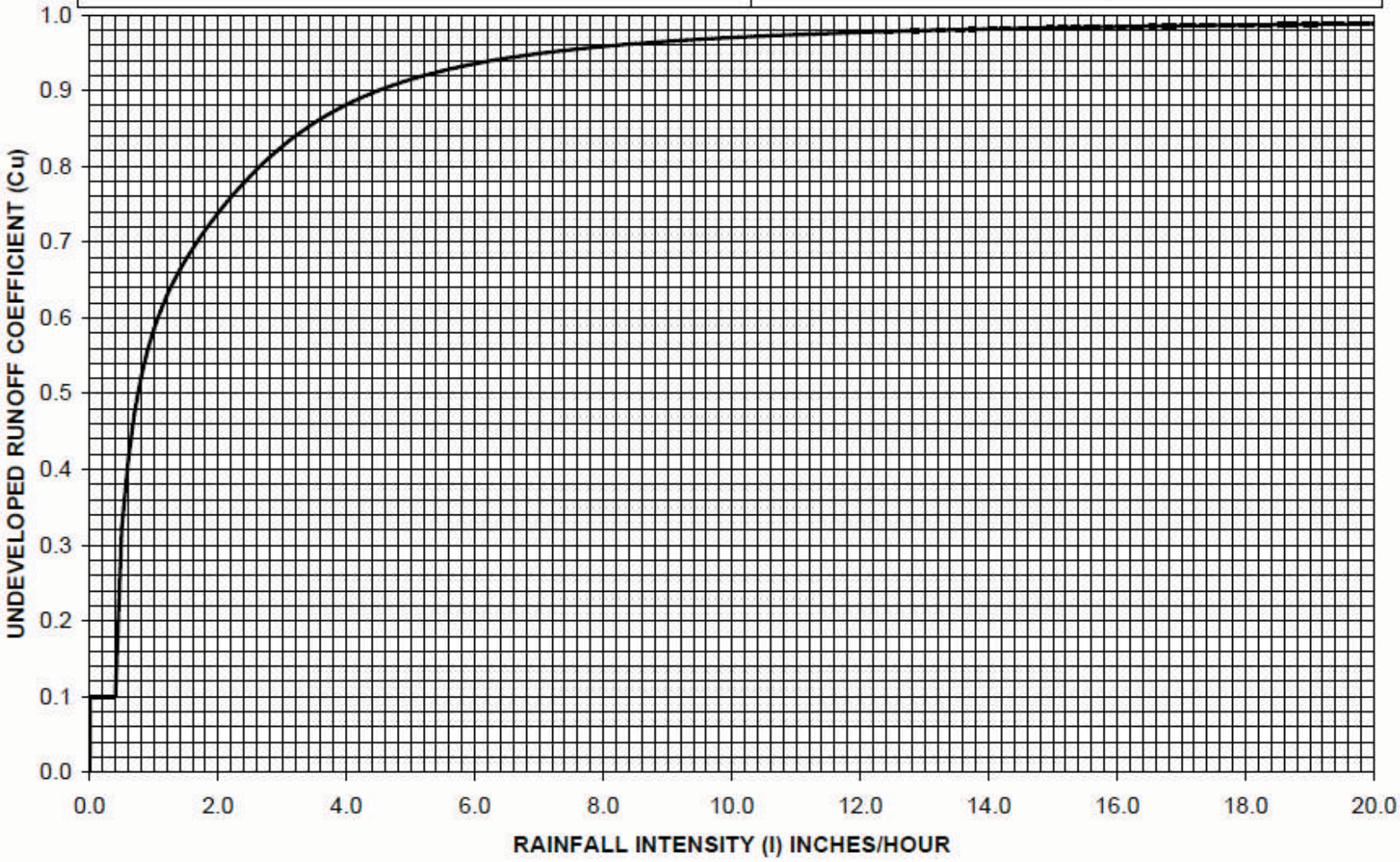
File:Soil Curve Data and Graphs 0-24 Tab:GN3 HYDROLOGY APPENDIX C BJW: 06/14/2004

$C_D = (0.9 * IMP) + (1.0 - IMP) * C_U$

Where: C_D = Developed Runoff Coefficient
IMP = Proportion Impervious
C_U = Undeveloped runoff coefficient

Los Angeles County Department of Public Works

RUNOFF COEFFICIENT CURVE
SOIL TYPE NO. 006



File:Soil Curve Data and Graphs 0-24 Tab:GN6 HYDROLOGY APPENDIX C BJW: 06/14/2004

Appendix E – Hydrology Design Criteria

HYDROLOGY METHOD: Los Angeles County Public Works Department
Hydrology Manual (January 2006)
Runoff Calculation Method: MODRAT

DESIGN STORM: 0.75-inch, 25 & 50-Year Storm

SOIL TYPE: 003 & 006 (See attached Hydrologic Map 1-H1.9)

AREAS: A = Area of drainage for each sub area is shown on the Hydrology Plan in Appendix G

DRAFT

Appendix F – Hydrology Calculations

COMMUNITY BASED MASTER PLAN FOR THE REDEVELOPMENT OF JORDAN DOWNS AND ADJACENT AREAS
Existing Hydrology Calculations for the 0.75-inch Design Storm
Method Employed: MODRAT with the Los Angeles County Tc Calculator
Mollenhauer Group Project No. LA30111
February 2, 2010

Input Info								
	Subarea	Area (Ac)	Imperviousness (decimal)	Frequency (Design Storm)	Soil Type	Length (ft)	Slope	Isohyet (in)
Existing	A	17.99	0.21	0.75	6	2050	0.00161	0.75
	B	5.79	0.26	0.75	6	348	0.005172	0.75
	C	14.75	0.07	0.75	6	1830	0.002022	0.75
	D	9.83	0.99	0.75	6	345	0.008696	0.75
	E	29.87	0.21	0.75	6	700	0.001714	0.75
	F	8.94	0.36	0.75	6	368	0.00788	0.75
	G	12.5	0.82	0.75	6	300	0.009667	0.75
	H	4.73	0.69	0.75	6	411	0.005109	0.75

Output Info								
	Subarea	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Volume (acre-ft)	Volume (cf)
Existing	A	30	0.19	0.1	0.27	0.92	0.30	13,068
	B	30	0.19	0.1	0.31	0.34	0.11	4,792
	C	30	0.19	0.1	0.16	0.45	0.15	6,534
	D	24	0.21	0.1	0.89	1.84	0.54	23,522
	E	30	0.19	0.1	0.27	1.53	0.50	21,780
	F	30	0.19	0.1	0.39	0.66	0.22	9,583
	G	23	0.22	0.1	0.76	2.09	0.59	25,700
	H	30	0.19	0.1	0.65	0.58	0.19	8,276

Project Area Totals	
	Flow rate (cfs)
Existing	**8.41**
	Volume (cf)
Existing	**113,256**
	Volume (acre-ft)
Existing	**2.60**

DRAFT

COMMUNITY BASED MASTER PLAN FOR THE REDEVELOPMENT OF JORDAN DOWNS AND ADJACENT AREAS
Proposed Hydrology Calculations for the 0.75-inch Design Storm
Method Employed: MODRAT with the Los Angeles County Tc Calculator
Mollenhauer Group Project No. LA30111
February 2, 2010

Input Info								
	Phase	Area (Ac)	Imperviousness (decimal)	Frequency (Design Storm)	Soil Type	Length (ft)	Slope	Isohyet (in)
Proposed	1	22.5	0.42	0.75	6	590	0.004358	0.75
	2	18.9	0.57	0.75	6	625	0.004358	0.75
	3	13.7	0.42	0.75	3	660	0.004358	0.75
	4	51.4	0.55	0.75	3	500	0.004358	0.75

Output Info								
	Phase	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Volume (acre-ft)	Volume (cf)
Proposed	1	30	0.19	0.1	0.44	1.88	0.61	26,572
	2	30	0.19	0.1	0.56	2.01	0.65	28,314
	3	30	0.19	0.1	0.44	1.15	0.37	16,117
	4	30	0.19	0.1	0.54	5.27	1.71	74,488

Project Area Totals	
	Flow rate (cfs)
Proposed	**10.31**
	Volume (cf)
Proposed	**145,491**
	Volume (acre-ft)
Proposed	**3.34**

DRAFT

COMMUNITY BASED MASTER PLAN FOR THE REDEVELOPMENT OF JORDAN DOWNS AND ADJACENT AREAS
Existing Hydrology Calculations for the 25-Year Design Storm
Method Employed: MODRAT with the Los Angeles County Tc Calculator
Mollenhauer Group Project No. LA30111
February 2, 2010

Input Info								
	Subarea	Area (Ac)	Imperviousness (decimal)	Frequency (Design Storm)	Soil Type	Length (ft)	Slope	Isohyet (in)
Existing	A	17.99	0.21	25	6	2050	0.00161	5.022
	B	5.79	0.26	25	6	348	0.005172	5.022
	C	14.75	0.07	25	6	1830	0.002022	5.022
	D	9.83	0.99	25	6	345	0.008696	5.022
	E	29.87	0.21	25	6	700	0.001714	5.022
	F	8.94	0.36	25	6	368	0.00788	5.022
	G	12.5	0.82	25	6	300	0.009667	5.022
	H	4.73	0.69	25	6	411	0.005109	5.022

Output Info								
	Subarea	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Volume (acre-ft)	Volume (cf)
Existing	A	30	1.29	0.64	0.69	16.01	2.54	110,642
	B	8	2.4	0.78	0.81	11.26	0.92	40,075
	C	29	1.31	0.64	0.66	12.75	1.49	64,904
	D	6	2.75	0.8	0.90	24.33	3.63	158,123
	E	15	1.79	0.71	0.75	40.10	4.24	184,694
	F	7	2.56	0.79	0.83	19.00	1.69	73,616
	G	6	2.75	0.8	0.88	30.25	4.02	175,111
	H	8	2.4	0.78	0.86	9.76	1.34	58,370

Project Area Totals	
	Flow rate (cfs)
Existing	**163.46**
	Volume (cf)
Existing	**865,537**
	Volume (acre-ft)
Existing	**19.87**

DRAFT

COMMUNITY BASED MASTER PLAN FOR THE REDEVELOPMENT OF JORDAN DOWNS AND ADJACENT AREAS
Proposed Hydrology Calculations for the 25 Year Design Storm
Method Employed: MODRAT with the Los Angeles County Tc Calculator
Mollenhauer Group Project No. LA30111
February 2, 2010

Input Info								
	Phase	Area (Ac)	Imperviousness (decimal)	Frequency (Design Storm)	Soil Type	Length (ft)	Slope	Isohyet (in)
Proposed	1	22.5	0.42	25	6	590	0.004358	5.022
	2	18.9	0.57	25	6	625	0.004358	5.022
	3	13.7	0.42	25	3	660	0.004358	5.022
	4	51.4	0.55	25	3	500	0.004358	5.022

Output Info								
	Phase	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Volume (acre-ft)	Volume (cf)
Proposed	1	11	2.07	0.74	0.81	37.73	4.59	199,940
	2	11	2.07	0.74	0.83	32.47	4.69	204,296
	3	15	1.79	0.29	0.55	13.49	2.54	110,642
	4	12	1.99	0.32	0.64	65.46	11.7	509,652

Project Area Totals	
	Flow rate (cfs)
Proposed	**149.15**
	Volume (cf)
Proposed	**1,024,530**
	Volume (acre-ft)
Proposed	**23.52**

DRAFT

COMMUNITY BASED MASTER PLAN FOR THE REDEVELOPMENT OF JORDAN DOWNS AND ADJACENT AREAS
Existing Hydrology Calculations for the 50-Year Design Storm
Method Employed: MODRAT with the Los Angeles County Tc Calculator
Mollenhauer Group Project No. LA30111
February 2, 2010

Input Info								
	Subarea	Area (Ac)	Imperviousness (decimal)	Frequency (Design Storm)	Soil Type	Length (ft)	Slope	Isohyet (in)
Existing	A	17.99	0.21	50	6	2050	0.00161	5.72
	B	5.79	0.26	50	6	348	0.005172	5.72
	C	14.75	0.07	50	6	1830	0.002022	5.72
	D	9.83	0.99	50	6	345	0.008696	5.72
	E	29.87	0.21	50	6	700	0.001714	5.72
	F	8.94	0.36	50	6	368	0.00788	5.72
	G	12.5	0.82	50	6	300	0.009667	5.72
	H	4.73	0.69	50	6	411	0.005109	5.72

Output Info								
	Subarea	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Volume (acre-ft)	Volume (cf)
Existing	A	28	1.52	0.68	0.73	19.96	3.01	131,116
	B	7	2.91	0.82	0.84	14.15	1.08	47,045
	C	26	1.57	0.69	0.7	16.21	1.80	78,408
	D	6	3.13	0.83	0.9	27.69	4.14	180,338
	E	13	2.18	0.75	0.78	50.79	5.04	219,542
	F	6	3.13	0.83	0.86	24.06	1.94	84,506
	G	5	3.41	0.85	0.89	37.94	4.60	200,376
	H	7	2.91	0.82	0.88	12.11	1.54	67,082

Project Area Totals	
	Flow rate (cfs)
Existing	**202.91**
	Volume (cf)
Existing	**1,008,414**
	Volume (acre-ft)
Existing	**23.15**

DRAFT

COMMUNITY BASED MASTER PLAN FOR THE REDEVELOPMENT OF JORDAN DOWNS AND ADJACENT AREAS
Proposed Hydrology Calculations for the 50 Year Design Storm
Method Employed: MODRAT with the Los Angeles County Tc Calculator
Mollenhauer Group Project No. LA30111
February 2, 2010

Input Info								
	Phase	Area (Ac)	Imperviousness (decimal)	Frequency (Design Storm)	Soil Type	Length (ft)	Slope	Isohyet (in)
Proposed	1	22.5	0.42	50	6	590	0.004358	5.72
	2	18.9	0.57	50	6	625	0.004358	5.72
	3	13.7	0.42	50	3	660	0.004358	5.72
	4	51.4	0.55	50	3	500	0.004358	5.72

Output Info								
	Phase	Tc-calculated (min.)	Intensity (in./hr)	Cu	Cd	Flow rate (cfs)	Volume (acre-ft)	Volume (cf)
Proposed	1	10	2.46	0.78	0.83	45.94	5.33	232,175
	2	10	2.46	0.78	0.85	39.52	5.41	235,660
	3	13	2.18	0.35	0.58	17.32	2.93	127,631
	4	10	2.46	0.39	0.67	84.72	13.33	580,655

Project Area Totals	
	Flow rate (cfs)
Proposed	**187.50**
	Volume (cf)
Proposed	**1,176,121**
	Volume (acre-ft)
Proposed	**27.00**

DRAFT

Appendix G – Phasing Plan

DRAFT


PHASE 4
PHASE 3
PHASE 2
PHASE 1
PHASE 3
PHASE 4
PHASE 4
Jordan Downs Community-Based Redevelopment
Phasing Plan
Comunidad Jordan Downs Re-desarrollo

DRAFT

Appendix H – Retention / Detention Basin Location

DRAFT

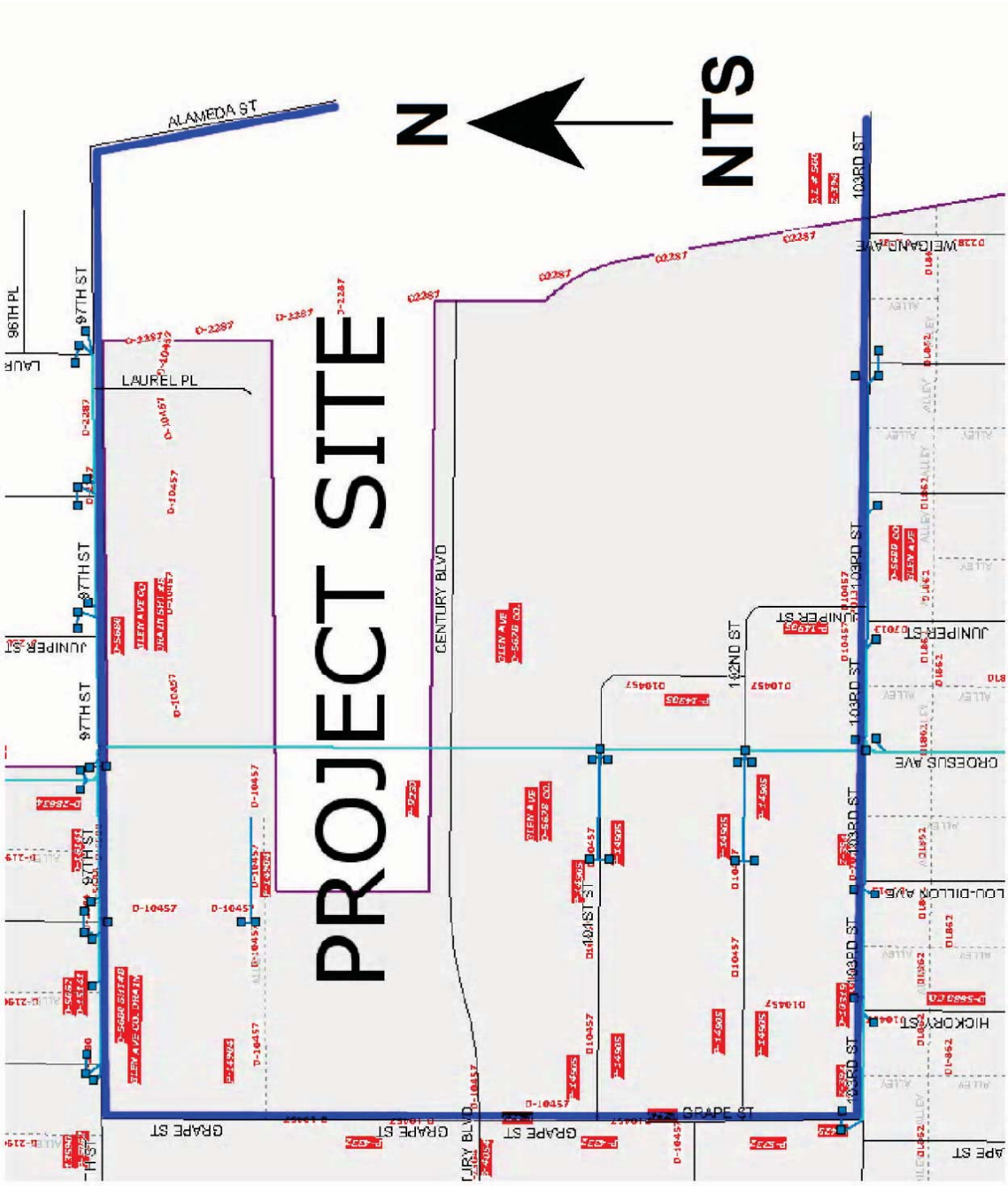
RETENTION / DETENTION BASIN LOCATIONS

Jordan Downs Community-Based Redevelopment
Site Plan

Comunidad **Jordan Downs** Re-desarrollo

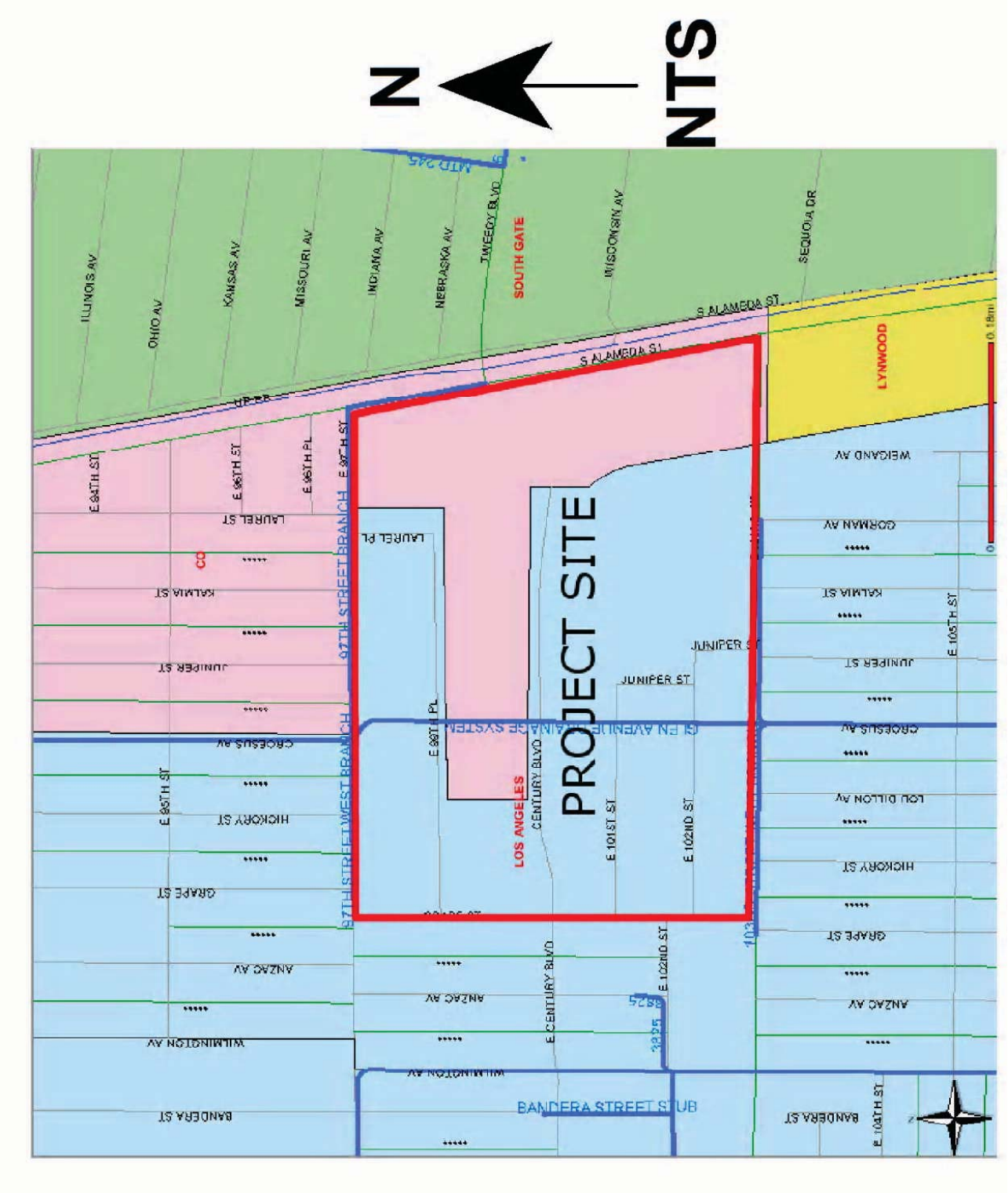
Appendix I – City of LA Catch Basin Exhibit

DRAFT


PROJECT SITE
N
NTS
ALAMEDA ST
97TH ST
96TH PL
LAUREL PL
CENTURY BLVD
102ND ST
103RD ST
JUNIPER ST
GRAPE ST
CROESUS AVE
WEIGAND AVE
HICKORY ST
LOU DILLON AVE

Appendix J – County of LA Storm Drain Exhibit

DRAFT


N
NTS
PROJECT SITE
S ALAMEDA ST
SOUTH GATE
LYNWOOD
ILLINOIS AV
OHIO AV
KANSAS AV
MISSOURI AV
INDIANA AV
NEBRASKA AV
TWEEDY BLVD
WISCONSIN AV
SEQUOIA DR
E 84TH ST
E 85TH ST
E 85TH PL
E 86TH ST
LAUREL ST
LAUREL PL
97TH STREET BRANCH
97TH STREET/WEST BRANCH
JUNIPER ST
E 85TH PL
GLEN AVENUE DRAINAGE SYSTEM
LOS ANGELES
CENTURY BLVD
E 101ST ST
E 102ND ST
E 103RD ST
E 104TH ST
E 105TH ST
CROESUS AV
HICKORY ST
GRAPE ST
ANZAC AV
WILMINGTON AV
BANDERA ST
BANDERA STREET STUB
WEIGAND AV
GORMAN AV
KALMIA ST
LOU DILLON AV

JORDAN DOWNS COMMUNITY – BASED REDEVELOPMENT

Surface Water Quality

The lifespan of the project will have an adverse effect on the quality of the surface water runoff downstream from the project site and also the quality of runoff during and after. The project will have runoff treatment measures designed and installed such that the impacts to receiving waterways are minimized.

This section of the report identifies potential stormwater runoff treatment and mitigation options for the project site. These options depend on the underlying soil characteristics which will be researched in a construction-grade geotechnical investigation to occur at the time of detailed design. The treatments units chosen will be sized to hold the volume of runoff from the 0.75-inch storm.

Existing Conditions

The Los Angeles County Department of Public Works has set a requirement for new developments that the stormwater runoff rate and volume from new sites shall not exceed the pre-development runoff rate and volume. Furthermore, the County has established design standards (or Best Management Practices; BMPs) to address this requirement, which are listed in the County's September 2002 Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP) [3]. The City of Los Angeles Stormwater Program also addresses the treatment and mitigation of stormwater runoff from new developments. The applicable baseline requirements defined in the City's Best Management Practices handbook [4] were adopted from the County's SUSMP manual. This project will employ the volumetric treatment control BMP taken from section 3 of the County SUSMP Manual [3]:

> *Mitigate (infiltrate or treat) stormwater runoff from…the volume of runoff produced from a 0.75-inch storm event, prior to its discharge to a stormwater conveyance system.*

This project's potential mitigation measures are discussed below.

The existing stormwater conveyance system is designed to handle the runoff from the highly impervious project site. The design capacity is the volume of runoff from the 50-year storm. The proposed design will reduce the imperviousness therefore reducing the amount of runoff generated from the site.

DRAFT

Significance Threshold

The project would have a significant impact on water quality if discharges associated with the project would create pollution, contamination or nuisance as defined in Section 13050 of the California Water Code or that cause regulatory standards to be violated, as defined in the applicable NPDES Stormwater permit or Water Quality Control Plan for the receiving water body.

Project Impacts

The California Stormwater Resources Control Board (SWRCB) requires a Stormwater Pollution Prevention Plan (SWPPP) be prepared to address the quality control of stormwater runoff during project construction. This project will have a SWPPP, designed in accordance with the California Stormwater Quality Association (CASQA) Construction Handbook, in place during construction to negate the downstream impacts of the project.

The post-construction stormwater runoff quality could adversely affect downstream conditions if the measures are not designed correctly to treat the runoff from the site. The post-construction treatment measures will be chosen such that pollutants will be removed before the runoff enters the City's storm drain system and that a volume of it will be retained onsite.

Mitigation Measures

A SWPPP will be prepared in accordance with the CASQA Construction Handbook at the time of detailed design. Implementation of the SWPPP will begin when construction begins, before the initial clearing, grubbing and grading operations since these activities can usually increase erosion potential on the site. During construction, the SWPPP will be referred to frequently and amended by the owner and contractors as changes occur in construction operations which could have significant effects on the potential for discharge of pollutants.

Post-construction measures to treat stormwater runoff such as catch basin filters or retention basin filters will be in place and designed to handle the calculated flow rates.

Impacts After Mitigation

Receiving waterways will not be affected adversely by construction activities. Any construction debris will be kept onsite and properly disposed of. Post-construction quality control measures will capture sediment, debris, trash & oils or grease. The mitigated volume can be used to help recharge the groundwater supply thus defending against potentially harmful subsidence or as supplemental volumes to irrigation or sewer systems.

The BMPs chosen for the site will depend on the underlying soil composition. A construction-grade geotechnical investigation by others which will address soil permeability and percolation rates will aid in this decision. This investigation will reveal whether infiltration is a viable option, as determined by the civil engineer of record on the project design team at the time.

DRAFT

If infiltration is determined to be possible, a combination of the following BMPs will be designed. An underground detention basin which will receive filtered stormwater runoff and be sized to detain and infiltrate the volume from the 0.75-inch storm event or "first flush", in accordance with City and County standards. A network of storm drain lines will convey runoff received from multiple catch basins fitted with filters located throughout the project site and into the retention or detention basins. Each catch basin filter will be capable of removing 80% of Total Suspended Solids (TSS) to include oil and grease, debris and sedimentation. Catch basins will be located in depressions in parking lots and at other low points in high pedestrian traffic areas.

Additional options include landscaped infiltration and flow-through planters, grass pavers and permeable paving. Infiltration and flow-through planters act as runoff filters and smaller infiltration pits. These BMPs allow for more localized infiltration which will recharge the ground water supply at more locations across the project site. If infiltration is deemed to be appropriate via the construction-grade geotechnical investigation, then a combination of these BMPs will be chosen to mitigate the runoff from the site.

If infiltration is not possible due to the soil composition, that is if it is too clayey or the air void ratio is too low, then the above options do not exist and an alternate approach must be taken. An underground retention basin will be designed to receive filtered runoff from a series of catch basins fitted with filters across the site. Each catch basin filter will be capable of removing 80% of Total Suspended Solids (TSS) to include oil and grease, debris and sedimentation. Catch basins will be located in depressions in parking lots and at other low points in high pedestrian traffic areas.

Cumulative Impacts

The surrounding projects could be affected by the proposed development. These projects will not be affected adversely due to the reduction in stormwater runoff rate and volume. Conversely, any effects felt from the runoff rates and volumes will be reduced by the onsite retention of runoff volumes. If the proposed project were not being conducted those projects near the project site could be potentially harmed by repeated exposure to high runoff rates and volumes. The new project diminishes this possibility by mitigating the amount of runoff. These measures improve the community by reducing downstream effects and also contribute to self-sustainability, as an underground basin could be modified to treat and re-use stormwater runoff for other purposes such as irrigation or sewer applications.

DRAFT

References

[1] U.S. Green Building Council LEED New Construction and Major Renovation Reference Guide Version 2.3. October 2007.

[2] California Stormwater Quality Association Construction Handbook. September 2004.

[3] Los Angeles County - A Manual for the Standard Urban Stormwater Mitigation Plan (SUSMP). September 2002.

[4] City of Los Angeles Stormwater Program. "Development Best Management Practices Handbook, Part B – Planning Activities". Third Edition. March 2003.

DRAFT

JORDAN DOWNS COMMUNITY – BASED REDEVELOPMENT

Utilities – Water

Existing Conditions

The Los Angeles City Department of Water and Power (LADWP) currently provides water services necessary to the project site. The site currently has a 10" CIP (Cast iron Pipe) that runs easterly on East 97th Street. This line turns north at Croesus Avenue. An 8"CIP also runs north/south along Grape Street. An 8" CIP line branches off from this 10" line close to East 97th Street running southerly to East 103rd Street. A 12" CIP line runs east/west to mid way between Grape and Juniper Street. This line changes size to an 8" line, continuing easterly towards Alameda Street. There are several 6" domestic water lines on various streets within the Jordan Downs' property, such as East 99th Place, Century Boulevard and Juniper Street. There are also several lines inside easements crossing Jordan Downs' property.

The LADWP requires that a Service Advisory Request (SAR) be performed once fire flow requirements are determined after consulting with the Department of Building and Safety (DBS) and the Los Angeles Fire Department (LAFD). The purpose of the SAR is to determine if existing LADWP water supply facilities is sufficient for the proposed fire flow requirements. SAR reports are required by the DBS for all fire services.

Significance Threshold

The Project would have a significant impact if:

- The construction of new or upgraded water distribution infrastructure would result in a substantial obstruction of vehicles and/or pedestrian access;
- The total estimated water demand for the Project at buildout, including demand for water, sewer, and landscaping irrigation systems, would exceed available water supplies; or
- The estimated water demand for the Project would exceed the available capacity within the distribution infrastructure that would serve the Project Site

Project Impacts

The new utilities system may adversely affect the environment if it is designed incorrectly. It must be designed to handle peak conveyance demands. Incorrect pipe sizes or configurations may not allow for

DRAFT

the demand to be met efficiently. The capacity of the water system will be determined at a later date when a fire flow test is performed.

The proposed project will have no impact on the macro-level water supply source for the region in which this site lies.

Mitigation Measures

New conveyance systems will be designed to ensure the water demand of the new development is met. A possible mitigation measure that can be used to help reduce the demand on water supply is the treatment of stormwater to help reduce the amount of potable water required for irrigation.

Impacts After Mitigation

The water demand is reduced and the supply can theoretically be reduced. The project's dependency on the conveyance infrastructure is reduced because the ability to self-sustain is increased. Configuration of the proposed utilities system will not cause obstruction due to emplacement underground or out of high pedestrian traffic areas.

Cumulative Impacts

The surrounding projects could be affected by the proposed development. These projects will not be affected adversely due to the fact that proper sizing and coordination with LADWP will be required.

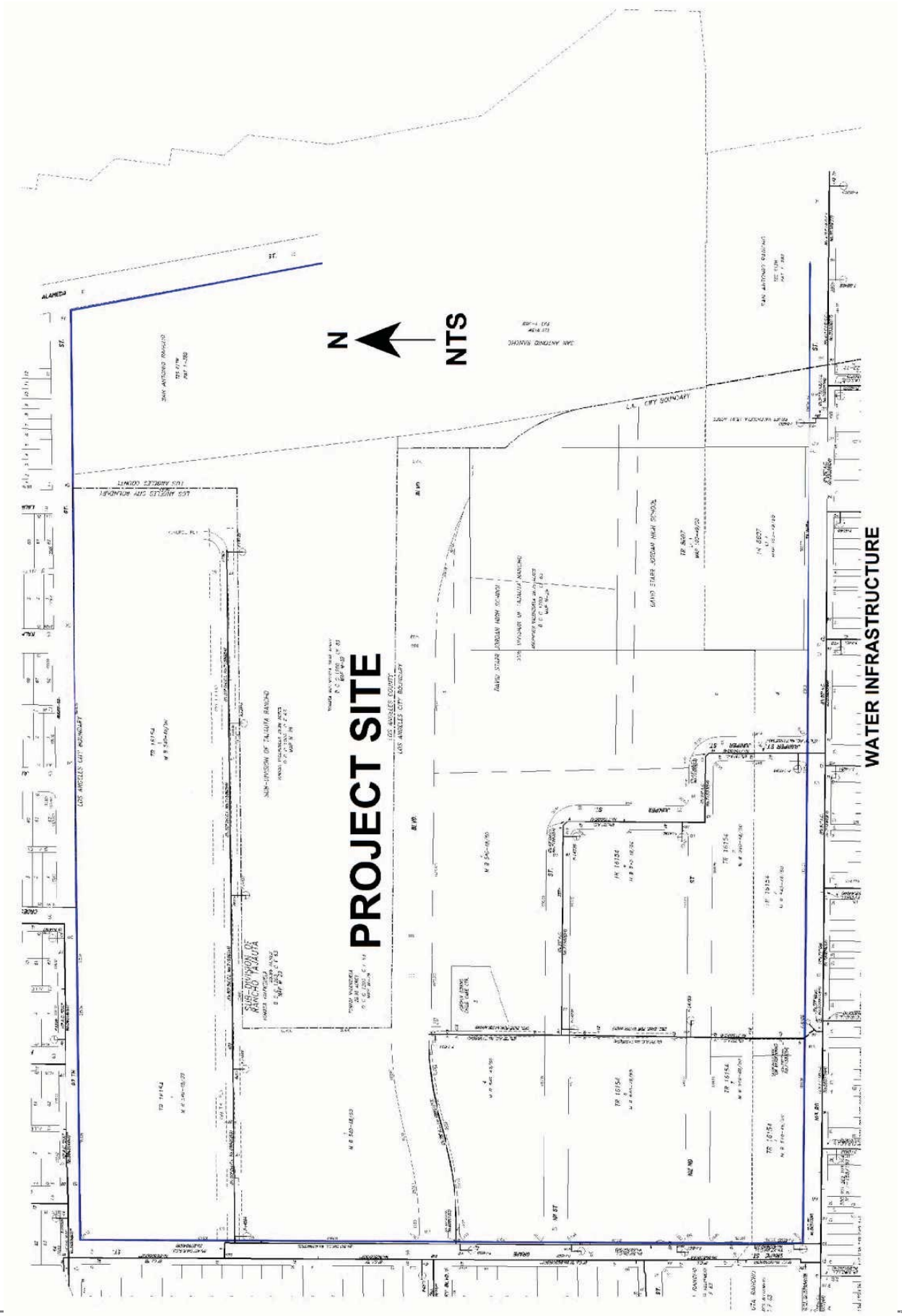
Utilities Water Appendix:

K) Water Service Map

DRAFT

Appendix K – Water Service Map

DRAFT


N
NTS
PROJECT SITE
WATER INFRASTRUCTURE

JORDAN DOWNS COMMUNITY – BASED REDEVELOPMENT

Utilities – Sewer

Existing Conditions

The existing sanitary sewer system is provided by the City of Los Angeles. An 8" VCP sewer line runs parallel to the centerline of East 97th Street, starting a quarter of the way between East 97th Street and the Alameda Corridor, flowing west for approximately 160'. This 8" line then makes a 90 degree turn flowing south for approximately 390' to a point of connection with an 8" VCP line on East 99th Place. There is also an 8" line starting at Croesus Avenue, running easterly. At Juniper Street it collects a 12" line flowing from the north and continues on East 97th Street, changing to a 15" VCP on Laurel Street. At Laurel Street it collects an 8" line flowing from the north and continues southerly through Jordan Downs' property, paralleling the San Antonio Rancho subdivision. An 8" VCP sewer line runs westerly, starting approximately half way on 99th place. Halfway it collects the 8" line flowing southerly from 97th Street and continues westerly to a point of connection on Grape Street. A 15" VCP line runs southerly from 97th Street This line eventually connects to East 103rd Street and continues southerly to Welgand Avenue. This line collects an 8" VCP sewer line running easterly north of East 99th Place. An 8" VCP sewer line starts at East 101st Street and Juniper Street. It runs southerly on Juniper Street, crossing East 102nd Street and continuing south through residential property, then continuing east parallel to East 103rd Street, through residential property to the intersection of East 103rd Street and Juniper Street, where it collects a 8" VCP line from Juniper Street and continues south on Juniper, crossing East 103rd Street. An 8" VCP line runs southerly on Grape Street starting at the intersection with 99th Place (collecting the sewer from 99th Place). This line continues southerly on Grape Street collecting the easterly sewer from East 101st Street. It further continues southerly to East 102nd Street, making a turn westerly onto East 102nd Street. An 8" VCP sewer line starts three quarters of the way on East 101st Street, connecting to the 8" VCP sewer line running southerly on Grape Street. An 8" VCP line starts half way on East 102nd Street running westerly, turning southerly, before Grape Street, through residential property. This line continues southerly, crossing East 103rd Street and continuing south. An 8" VCP line starts at the northerly R/W of East 103rd Street, east of Grape Street, running south.

DRAFT

Significance Threshold

The Project would have a significant impact if the existing sewer system cannot handle the additional sewer flow.

Project Impacts

The new sewer system may adversely affect the environment if it is designed incorrectly. The development of new homes impacts the sewer system as it introduces additional flow into the existing system. Incorrect pipe sizes or configurations may not allow for the demand to be met efficiently.

Mitigation Measures

Preliminary conversations with the County Sanitation District indicate that a maximum of 2400 units can be feasible for construction. The existing sewer based on preliminary information will be able to handle the proposed development.

Impacts After Mitigation

Restricting the number of units for construction will reduce the sewer load into the existing sewer system.

Cumulative Impacts

The surrounding projects could be affected by the proposed development. The additional sewer flow that the project would generate is less than the available capacity. Although this flow amount is adequate for the sewer system, the available capacity can not be all dedicated to this project as there are other developments that take place within the city.

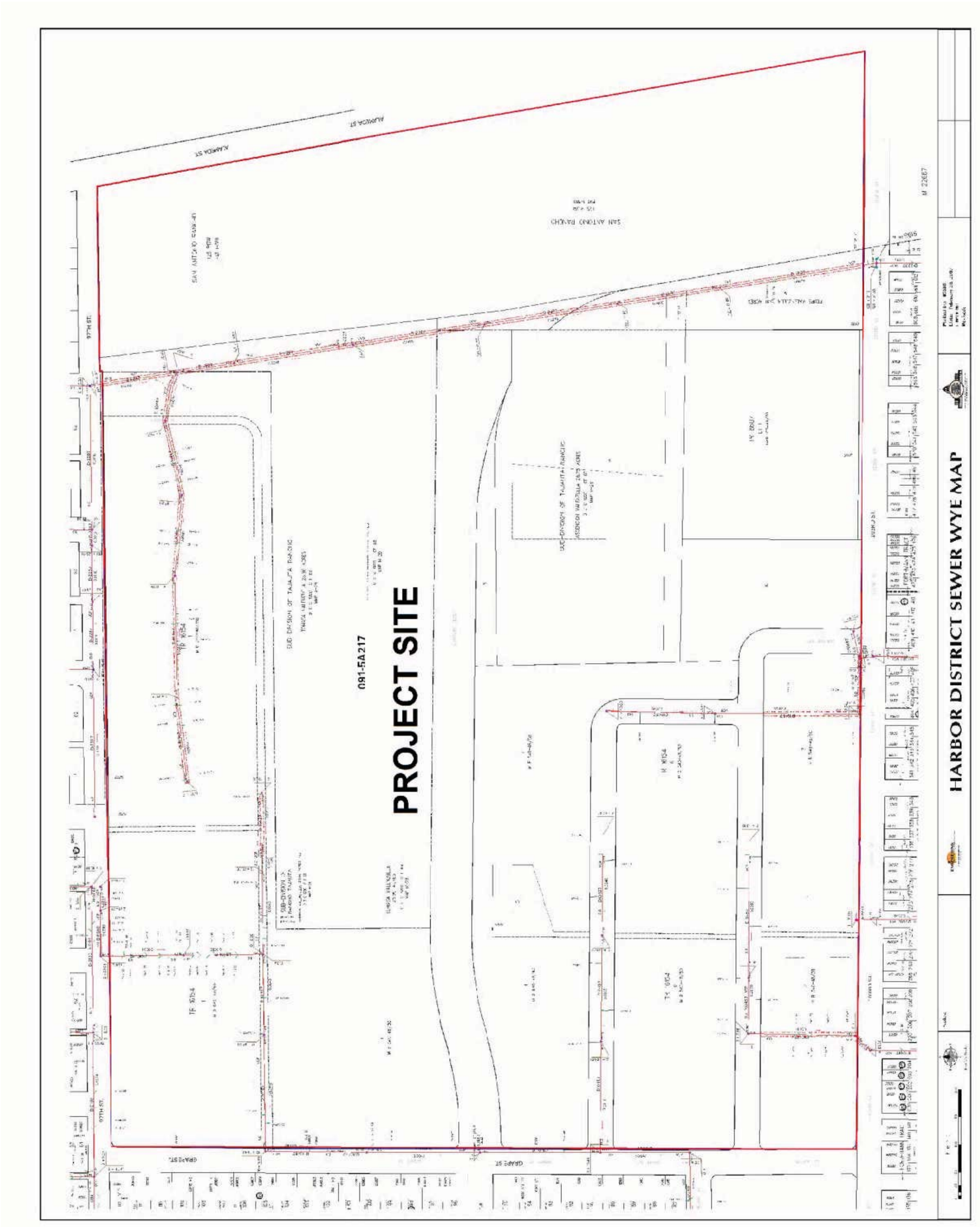
Utilities Sewer Appendix:

L) Sewer Wye Map

DRAFT

Appendix L – Sewer Wye Map

DRAFT


HARBOR DISTRICT SEWER WYE MAP
PROJECT SITE
091-5A217
97TH ST.
GRAPE ST.
M 22067

JORDAN DOWNS COMMUNITY – BASED REDEVELOPMENT

Preparers of the Report

Jason Sheng
Design Engineer
Mollenhauer Group
T (213) 624-2661
F (213) 614-1863
jsheng@mollenhauergroup.com
http://www.mollenhauergroup.com

Timothy Ritiau
Design Engineer
Mollenhauer Group
T (213) 624-2661
F (213) 614-1863
tritiau@mollenhauergroup.com
http://www.mollenhauergroup.com

DRAFT