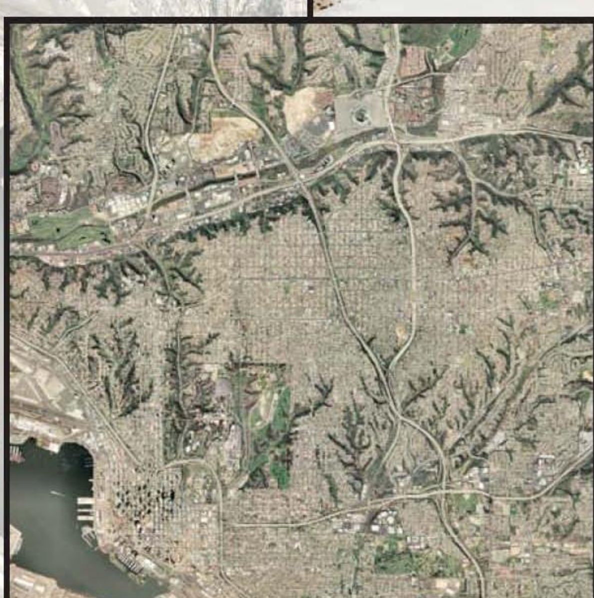
Phase III Draft Final Report District 3 Sidewalk Study



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LIST OF EXHIBITS

I. PROJECT OVERVIEW

The District 3 Sidewalk Study was undertaken by the City of San Diego in response to requests from community groups representing portions of the Mid-city area within Council District 3. The study area encompasses the communities of Normal Heights, Greater North Park, and South Park.

The purpose of this study is not to identify streets that lack sidewalk improvements. Rather, the purpose is to identify locations where engineering issues such as inadequate curb height or adverse sidewalk slopes prevent the development of pedestrian enhancements, and to recommend a program of public improvements that can alleviate these obstacles to the fullest extent possible. The objective of the project is to develop a prioritized list of recommended improvement projects within the study area, with associated cost estimates, to assist the City in identifying appropriate capital improvement projects that can be implemented as various levels of funding become available.

The City of San Diego has an on-going program in which sidewalk improvements are installed on a cooperative basis between the City and homeowners, when requested by the property owner. Currently the City shares the cost of this work with the homeowners by performing the work using City forces or contractors, then billing the property owners for half the cost. Within Council District 3, the Councilmember has in recent years chosen to use part of the available discretionary funds to increase the percentage of City cooperation to 75% in order to encourage increased participation in the program.

In some locations, the construction of new curb and sidewalk improvements is complicated by engineering issues. Often this is a result of many years of resurfacing projects which have left the street surface nearly at the elevation of the top of curb. This causes an adverse drainage condition in which curbs cannot be raised to the standard height above the adjacent pavement without blocking drainage from the adjacent lot. Other impediments within older neighborhoods include non-standard grading conditions within private lots, and street configurations that do not support ADA-compliant improvements.

II. SUMMARY

The District 3 Sidewalk Study scope of work included three separate phases. The first phase consisted of an inventory of pedestrian resources for the entire area encompassed by the communities of Normal Heights, North Park and South Park within Council District 3. Data were collected regarding reported drainage problems and indicators of pedestrian demand. The data were reviewed with representatives of the three community groups and input from the communities was used as the basis for determining which streets within the overall study area were the most appropriate candidates for more detailed study. Base mapping was prepared as part of the first phase, and the work product consisted of GIS-based maps showing the locations of pedestrian demand attractors and known drainage issues. Phase I maps also identified the streets selected for study in subsequent phases.

Phase II was referred to as the "focused" study. Special GPS-based equipment was used to assess existing conditions on all of the street segments identified in Phase I. The field data collection included the following elements of street condition:

- Existing curb heights, expressed as ranges
- Existing pavement cross-slopes
- Existing sidewalk cross-slope (i.e., identifying non-standard slope conditions that could present an engineering issue, such as sidewalks that drain away from the street toward private property)
- Locations where sidewalks and/or street improvements do not exist.

During this Phase II data collection process, photographs of the selected streets were taken and catalogued. In addition, data regarding existing pavement conditions was also gathered during the Phase II field data collection. Though not required by the scope of work, this data could be useful in determining appropriate improvement projects to enhance the pedestrian environment. For example, a street with very poor pavement condition would be deemed a better candidate for complete pavement replacement than one with excellent pavement conditions, even if other engineering conditions are similar.

Other work performed during Phase II included the use of GIS-based methods to develop numeric rankings of pedestrian priority levels to each street in the detailed study area. The rankings were expressed on a scale from 1 to 20 to describe the relative importance of each street segment in providing pedestrian mobility within the community.

The work product for Phase II included a report of the field data collection results with color-coded maps, a GIS-based map indicating pedestrian priority levels, and a graphic exhibit showing existing curb conditions in the "focused study" area.

III. OUTLINE OF PHASE III SCOPE

3.1 Detailed Study Area

A total of 227 block segments were included in the Detailed Study Area. In order to provide a convenient basis for referring to these locations in the remainder of this report, each block has been assigned a number. The block numbers can be seen on several of the figures in this report, including **Figure 1, Proposed Improvements** (see map pocket). The numbers are preceded by the prefixes NP, SP or NH to indicate which community planning area (North Park, South Park or Normal Heights) they are located in. The block numbers, address ranges and street names are also listed in **Table 3-1**.

TABLE 3-1
DETAILED STUDY AREA

Street Names	# of Blocks	Street Names	# of Blocks	Street Names	# of Blocks
South Park		North Park		Normal Heights	
Ash Street	11	Nutmeg Street	2	38th Street	2
Gregory Street	4	Felton Street	2	McClintock Street	2
Beech Street	2	33rd Street	1	Meade Ave.	7
Cedar Street	1	Palm Street	3	37th Street	2
31st Street	6	Bancroft Street	2	Cherokee Ave	4
Date Street	2	Redwood Street	3	36th Street	2
29th Street	1	30th Street	7	Wilson Ave.	2
Fern Street	6	Grim Ave	7	35th Street	6
33rd Street	5	Herman Ave	1	Monroe Ave	15
Elm Street	6	Thorn Street	5	Hawley Blvd	7
Bancroft Street	1	Upas Street	16	34th Street	2
Felton Street	2	Florida Street	2	32nd Street	4
Fir Street	1	Pershing Place	5	Madison Ave	12
Grape Street	3	Ray Street	5	Adams Ave	5
Hawthorn Street	5	Myrtle Ave	3	East Mtn View Dr	8
Ivy Street	5	Dwight Street	4	Collier Ave	6
Juniper Street	3	31st Street	1	Copley Ave.	2
		North Park Way	5	Arthur Ave.	2
		Utah Street	5	Eugene Place	2
		Ohio Street	4	North Mtn View Dr.	5
		Lincoln Ave	5	Cromwell Court	1
		Texas Street	3		
		Meade Ave	1		
		Idaho Street	2		
		Kansas Street	3		
		Illinois Street	3		
		Monroe Ave.	3		
		Oregon Street	1		
		Adams Ave.	5		
		Hamilton Street	1		
		Madison Ave.	2		

3.2 Phase III Scope of Work

The Scope of Work for Phase III of this study consisted of the following tasks:

Task III-1: Drainage Analysis

KHA performed field visit in which all streets in the Detailed Study Area will be visually assessed by a hydrologic engineer. The purpose of the field reconnaissance was to outline the limits of surface drainage basins affecting the Detailed Study Area, to identify the location of drainage facilities such as curb inlets or cross-gutters, and to identify locations where drainage conditions are likely to affect pedestrian movement. Major flow paths were identified, and preliminary level drainage calculations were performed. The calculations provide order-of-magnitude runoff quantities for identifying problem areas but are not intended to be at a level suitable for final design.

Task III-2: Identify Surface Grade Ranges

The longitudinal slope of each street segment is a key element that affects whether curb-and-gutters can be replaced without extensive street reconstruction. This is because the runoff carrying capacity of the curbs is dependent not only on the curb height but also on slope. An approximate slope was identified for each street segment. In most cases, the slope was estimated from contours shown on existing City topographic mapping. In some areas where terrain is very flat, surveying was performed to obtain existing top of curb elevations, which was used to calculate the slope of the street. Cross-slope also impacts the runoff carrying capacity a street, as well as limiting the available options for street repair. Data on existing cross-slopes was gathered as part of Phase II and used in the Phase III analysis.

Task III-3: Develop Criteria for Street Repair

In general, streets segments having standard-height curbs do not require engineering work for sidewalk replacement projects. Areas with reduced curb heights may require grinding of the roadway edge, or the deficiency may be so severe that only complete pavement replacement will be adequate. In consultation with City staff, criteria were developed for the level of design and construction work for a given set of conditions.

Task III-4: Prepare Ranked List of Locations Most in Need of Engineering Work

In consultation with the City's Project Manager and community representatives, ranking criteria were established for prioritizing the locations most in need of engineering work. The criteria assign point values to assess the relative severity of the following conditions:

- Reported problems within a segment
- Curb height
- Curb slope
- Runoff volume
- Importance of the segment as a pedestrian corridor
- The degree of engineering work to correct the segment

Task III-5: Graphics

A series of CAD-based color-coded maps were prepared to depict the street segments having high, medium and low levels of priority based on the point ranking described above and recommended improvements by street segment, along with other graphical representations of the study results. These graphic maps can be found throughout this report.

Task III-6: Improvement Recommendations

The results of the study were used to develop a series of design or improvement projects that can serve as the basis for future design efforts. KHA attempted to identify logically connected segments of work, usually proceeding from the downstream end of drainage basins, to maximize community benefits and to avoid constructing isolated improvements that cannot achieve their full benefit without improvement of adjacent blocks.

Task III-7: Cost Estimates

Design and opinions of probable construction cost were prepared for each identified program of recommended improvements. The cost opinions are correlated with the priority ranking to develop a program of improvement work for various levels of available funding.

IV. SURFACE GRADE RANGES

4.1 Longitudinal Slopes of Streets

The Detailed Study Area is mostly characterized by flat terrain and streets having limited gradients. A few hilly areas can be found, especially in the southern areas of South Park, but most parts of the study area exhibit street slopes that fall short of current city standards. The current Street Design Manual establishes a minimum slope of 0.6% for streets in newly developing communities, but many of the streets in the study area have slopes of 0.3% or less. In a few cases, field surveying performed for this study revealed streets having literally no slope at all.

These flat gradients impact pedestrian improvements in two ways: First, the ability of the flat streets to convey runoff is severely limited (see **Table 5-1**, Section 5.4 below). This results in frequent inundation of sidewalks and a difficult walking environment for pedestrians during rainy weather. Second, the flat grades present a significant obstacle for construction of new curb, gutter and sidewalk in conformance with City standards. Particularly on streets having near-zero slopes, it may be difficult or impossible to undertake a curb reconstruction that is even close to meeting City standards without having to extend the construction a great distance upstream or downstream – resulting in a major project that is beyond the means of individual homeowners.

The longitudinal slope of each block segment was estimated primarily using available City topographic mapping. Some of the block segments were so flat that it was not possible to estimate the slope rate from topo mapping, or even to assess the direction of drainage from visual observation in the field. In those areas, field surveying was performed to establish actual curb and gutter elevations. The estimated slope rates for each block segment are presented in **Figure 12** (see map pocket).

4.2 Cross-slope of Streets

Most of the streets in the Detailed Study Area have cross-slopes that exceed the City standard of 2%. This is typically because of pavement overlay projects that, over many years, have tended to raise the central part of the pavement while being constrained by curbs at the edges. As part of the Phase II field data collection, cross slopes were measured and displayed on a graphic exhibit. The average cross-slope in the study area was found to be about 4 to 5%, with a few steeper locations.

The cross slope affects the runoff carrying capacity of the streets by increasing the concentration of flows near the curb. This is detrimental to pedestrian travel because it tends to increase sidewalk flooding.

The steeper cross-slopes place a constraint on available reconstruction options. Where cross-slopes are already unusually steep, it is less feasible to use grinding of the parking lane to re-establish the curb height (see Section 6.4 below). In addition, the newest ADA regulations require that crosswalks have a longitudinal grade of no more than 5%. It is difficult or impossible to comply with this regulation on streets having steep cross-slopes.

VI. CRITERIA FOR STREET REPAIR

6.1 Introduction

The goal of the District 3 Sidewalk Study is to develop a ranked list of recommended capital improvement projects for street repairs that will facilitate sidewalk replacement projects by homeowners. In order to develop a ranked list of improvements, it is necessary to establish a preliminary concept of the types of street improvement work that are likely to be associated with a given set of defective conditions.

The deficiencies that affect sidewalk construction opportunities in the mid-city communities primarily fall into two categories:

- Insufficient or substandard curb height resulting from many pavement overlays being added over the years.
- Poor drainage conditions and high concentrated flows, which are exacerbated in areas of substandard curb height.

The data collected during the Phase II study, as well as the hydrologic information gathered as part of Phase III, were used to identify the relative severity of the deficiencies in the detailed study area. The data include:

Curb Heights Curb heights were measured and grouped into one of four categories: greater than 5 inches (i.e., standard height or nearly standard), 3 to 5 inches (slightly substandard), zero to 3 inches (highly substandard) and zero or negative curb height. As described in the following recommended improvement criteria, the severity category will be one factor in determining the recommended repair, because the more severe impairment will generally warrant a more extensive and costly repair effort. This is because areas with reduced curb heights present the greatest obstacle to construction of new curb, gutter and sidewalks by homeowners. Also, streets with limited or no curb height are more susceptible to sidewalk flooding in even minor storms, and therefore should be given a higher level of priority for improvement work.

Pavement Cross Slope Pavement cross slopes are a factor in establishing recommended corrective measures for two reasons. First, pavement rehabilitation measures that tend to increase the cross slope, such as grinding down the pavement surface within the parking lane only, are less appropriate in areas that already exhibit unusually high cross-slopes. Second, recent interpretations of ADA regulations require that longitudinal slopes within a cross-walk may not exceed 5%. Some of the street surfaces within the study area already exceed 5%, which will place limitations on the corrective work that can be done there.

Drainage Conditions Drainage conditions are a factor in most of the cases where sidewalk or curb reconstruction is being prevented by engineering conditions. However, it is not always a severe impediment. Where street gradients are sufficiently steep, or where a street serves only a limited local drainage basin, storm flows may be adequately conveyed even within gutters of substandard depth. Although such a condition may be a challenge for installation of a new curb and gutter, it is usually one that can be readily overcome, and indeed a number of such installations already exist within the detailed study area. Therefore, street improvements to address drainage conditions are recommended only where the existing gutter depth is inadequate to convey storm flows. Recommended criteria for addressing local drainage deficiencies are discussed further below.

6.2 Recommended Improvements

Several repair and rehabilitation methods are available for substandard street pavements and drainage systems. For any given location, the most suitable treatment can only be developed as part of an engineered plan, based on detailed topographic surveys, pavement coring samples, and, in the case of drainage improvements, a drainage study in compliance with the City Drainage Manual. The scope of this study does not extend to collecting information at that level of detail, nor is it feasible to prepare complete engineering designs for the entire area comprised by the Detailed Study. Rather, this study will provide a set of typical, generic improvement recommendations to be applied for a given set of existing conditions. This allows calculation of order-of-magnitude costs for probable improvements that will allow the City to identify appropriate locations for CIP projects based on available funding. As a result, the improvement recommendations and cost estimates provided in this study should not be regarded as final designs nor exact costs, but rather as a tool for prioritization.

Three levels of street improvement work, plus a "no project" alternative and a drainage alternative, have been identified for purposes of categorizing the types of work likely to be required. The following is a description of the four proposed generic project categories, and the circumstances under which each would be recommended.

6.3 No Work Recommended

This category would be applied to locations where street improvement work is not justified, at least based on the goals of this study. In some cases, this could include streets with poor-quality existing pavements that may warrant improvement for reasons not related to pedestrian access, however that is not the focus of the District 3 Sidewalk Study. The circumstances that would typically result in a "no work" recommendation include:

- Recently reconstructed areas. Several streets within the study area were found to have been recently improved, either with new curbs, gutters and sidewalks or significantly upgraded public drainage systems. The streets with new sidewalks clearly would not warrant improvement work based on the goals of this study. Those with new drainage systems could potentially still need street improvements but our recommendation is to withhold further improvement work until and unless it becomes apparent that the new drainage systems have not solved the problem.
- Curb heights of 5 inches or greater. These curbs are at or very near the City standard curb height of 6 inches. These curbs are unlikely to require replacement to facilitate sidewalk construction. There may be a few exceptions to this criterion in locations with particularly severe drainage issues or unusual conditions such that curb height alone is not sufficient to provide an adequate pedestrian environment.
- Low priority streets. Streets with less than 5 inches curb height still may not warrant improvement work under this study if they are found to have a combination of low pedestrian demand and minor observed defects (for example, a cul-de-sac with low pedestrian volume, no major drainage basin, and a 3" curb face).

6.4 Pavement Grinding Within Parking Lane

The lowest level of improvement work would consist of grinding the existing pavement surface within the limits of the parking lane (assumed at 8 feet width) to restore the standard curb height. The grinding operation would typically take the pavement surface to an elevation 1 inch lower than the desired finished grade to allow for placement of an overlay surface course. Locations proposed for grinding would need to be assessed during final design based on pavement core samples. The typical goal of grinding would be to restore full standard curb height, however this could be modified based on the findings from the core samples. Design criteria would include:

- The existing pavement must be thick enough to allow at least 1.5 inches to remain at the completion of grinding. If the remaining pavement would be less than 1.5 inches it would probably be destroyed by the grinding operation, so complete removal would be preferred.
- The integrity of the pavement layer that would be exposed by the grinding should be assessed. If it does not appear competent as a base course, it would need to be removed and replaced.
- The cross slope of the street should be considered. This was part of the reason for gathering the cross slope data during the field data collection. The process of grinding and repaving will typically result in a finished surface that is steeper than the original, so if this creates an unacceptable slope, then complete removal and replacement of a wider area may be more suitable. At crosswalks, the surface grade must be limited to a maximum of 5% to comply with ADA requirements.
- The presence of utility trenches that have been capped with concrete is a factor in deciding whether grinding is appropriate. However, concrete trench caps are not a complete barrier to grinding. Where concrete exists, the contractor would need to use a different grinding device, at a slightly higher cost. The presence or absence of concrete trench surfacing is unknown at this time and should be assessed as part of the coring investigation during final design, in part because additional trenches could be installed between now and the time the work is actually performed.

For purposes of this study, grinding of the parking lane will be the recommended improvement under the following conditions:

- Substandard curb height (3 to 5 inches) and cross slopes are not excessive (as described above).
- Where existing curb heights are in the range of 3 to 5 inches, grinding will typically be the recommended improvement except where drainage impacts are minimal (low flow rates or steep slopes) <u>and</u> pedestrian priority is either low or moderate. In those cases, the recommendation will be “no work”.

6.5 Strip Removal and Reconstruction

For streets that do not meet the selection criteria for grinding as described above, the next level of reconstruction would be complete sawcutting, removal and replacement of a strip of pavement along the curb lane. The exact width of this removal would vary based on the detailed conditions of each location, however for the purposes of this study it is assumed that a 14’ width of removal would be typical. The conditions under which this option would be recommended are:

- Curb heights of 3 to 5 inches that did not qualify for grinding for the reasons stated above.
- Existing curb heights less than 3 inches. It is assumed that the amount of grinding required to restore a full curb height in this situation is not cost-effective, or is likely to expose very old pavements that would not be suitable as a base course. In most cases, curb heights less than 3 inches would be considered to warrant reconstruction unless drainage conditions are otherwise excellent and pedestrian demand is very low.
- Where curb heights are zero, strip removal will be recommended in all cases, regardless of drainage volume or pedestrian demand, unless criteria for complete reconstruction of the

street section are met as described below. (Note that although streets with very low pedestrian demand may have a recommended improvement associated with them, they are still likely to receive a low priority ranking for the work to actually be performed due to the limited pedestrian use.)

Where strip removal and reconstruction is recommended on both sides of the same block, consideration should be given to complete removal and replacement, since the two opposing strip removals would leave only a narrow strip of existing pavement remaining, especially on narrow streets.

6.6 Complete Removal and Reconstruction of the Street Pavement (Curb to Curb)

This alternative would consist of complete demolition of the street pavement, recompaction of subgrade, and replacement of pavement at a lower elevation. This would be recommended only in the most severely impacted areas due to cost as well as engineering issues. Typically this work would be designed to lower the entire surface elevation of the street. However, this could not be done in isolated sections, especially in areas of very flat terrain, since it could create a sump condition with no drainage outlet. Therefore the design of such a project would need to carefully consider downstream grades and might require some reconstruction of adjacent blocks to maintain a positive-drainage flow path.

In addition to greater cost, this measure would also cause the greatest extent of community disruption during construction. Traffic control would be more challenging than for the other measures. However, an advantage of this measure is that it provides an ideal roadway surface at the end of the project. The completely re-worked subgrade and surface would eliminate all steep crowns, potholes, and bumps resulting from old trenches, and would provide a superior surface for both pedestrians and vehicular traffic.

At least one of the following conditions, and probably more than one, would have to be present in order to recommend complete pavement removal and replacement:

- Zero curb height or curbs do not exist.
- High pedestrian priority.
- Isolated cases of severe drainage issues.
- Areas with an especially high level of known problems, as reported by the community groups or reflected in City records.
- Locations where such work can be performed without causing similar problems downstream.

The intersection of Hawley Blvd. and North Mountain View Drive is an example of a location that is recommended for complete removal and replacement. At this intersection there are zero-height flush curbs, non-standard drainage structures that are not functioning well, adjacent lots that in some cases lie below the street gutter and are subject to inundation from the street, and the area has been identified by the community as both a high pedestrian demand area and a site of chronic reported problems. It would still be necessary to study the effects of such an improvement project prior to making a recommendation of complete removal, but it provides an illustration of the type of location that would be considered for this category of improvement.

As noted in Section 6.5 above, complete removal and replacement may also be recommended, on a case-by-case basis, where strip removal is needed on both sides. This is to avoid leaving a narrow strip of old pavement in the center of the street. An example of a street where this is warranted is 36th Street between Madison and Monroe Avenues.

6.7 Summary

Every block within the study area presents a unique set of conditions, and each block requiring improvement will need a different combination of engineering solutions. In order to develop a system for prioritizing improvements, it is necessary to simplify the comparison by working with a limited range of improvement categories. It is understood that this limited list of improvement types and criteria will not completely encompass the full range of conditions that exist in the study area, but it does provide a useful approximation of relative severity of problems, importance of pedestrian routes, and order-of-magnitude cost of improvements that can be used to guide the Council office and City staff in deciding which locations should be addressed first.

VII. RANKED LIST OF REPAIR LOCATIONS

The recommended improvement work for each street segment was determined based on the criteria described above. The recommendations were also influenced by the level of pedestrian priority for a given segment. For example, a street with 4” high existing curbs would receive a recommendation of “edge grinding” if it has a “high” or “medium” level of pedestrian demand. The same curb height would receive a recommendation of “no improvement” in the case of a street having “low” pedestrian demand. The categories of pedestrian demand were defined as follows:

High	Pedestrian demand factor of 17 and higher
Medium	Pedestrian demand factor of 15 or 16
Low	Pedestrian demand factor of 14 or less

The pedestrian demand factor for each segment was determined in Phase II of the study based on GIS-based analysis of traffic generators and attractors, and the values ranged from a low of 9 to a high of 20. The categories noted above were selected such that about a third of the segments are classified as “low demand” and the top 25% are rated as “high demand.” The pedestrian priority rankings are presented graphically in **Figure 13, Pedestrian Priority** (see map pocket).

Each segment in the Detailed Study Area was studied individually, and many segments were found to have unique characteristics that influenced the selection of the appropriate improvement method. **Table 7-1, Segment Notes**, provides a complete list of the circumstances of each segment, with a separate listing for each side of the street since they are not always identical. More than half the study segments were found not to warrant improvement based on the criteria of the study.

For ease of reference, the recommended improvements have been summarized in the form of a table using the following letter codes to indicate the recommended repair method for each segment:

G	Pavement edge grinding recommended
S	Strip removal and replacement recommended
D	Drainage improvements recommended
O	Other

In addition to the pavement modifications described above, most (but not all) segments will require installation of curb ramps at each intersection as required by ADA. Some intersections have already been improved with curb ramps. Because curb ramps are a significant cost item, the quantity of required ramps has been listed separately for each segment. Similarly, many segments would require the construction of new concrete cross-gutters to attain positive drainage after lowering of the gutter flowline elevations. These have also been quantified separately in the table.

For each segment requiring improvement, an approximate construction cost was estimated. The basis of the cost estimates is described in detail in Section 9 of this report.

TABLE 7-1 SEGMENT NOTES

Community	Block Designation	Side (N,S,E,W)	Notes
NH	1	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	1	W	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	2	E	Adequate curb height, no improvement needed.
NH	2	W	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	3	N	Adequate curb height, no improvement needed.
NH	3	S	
NH	4	N	A combination of grinding and strip removal/replacement is warranted along Meade Ave. from Wilson Ave. to 39th Street. On the north side, cross gutters should be installed to maintain continuous flow path along the street. Elevations along the south side should be set to allow all blocks to drain southerly toward El Cajon Blvd.
NH	4	S	
NH	5	N	
NH	5	S	
NH	6	S	
NH	6	N	
NH	7	N	
NH	7	S	
NH	8	N	
NH	8	S	
NH	9	N	
NH	9	S	
NH	10	E	Some new curb/sidewalk exists, but most is old, broken curb/sidewalk very low to gutter. However, lots are well elevated above the street so sidewalk elevations could easily be raised with no impact to adjacent properties. Low ped demand. No improvements recommended.
NH	10	W	
NH	11	E	Adequate curb height; no improvement required.
NH	11	W	Pavement grinding is warranted.
NH	12	E	Nearly all-new curb & gutter on this block.
NH	12	W	
NH	13	E	Adequate existing curb, no improvement needed.
NH	13	W	
NH	14	W	
NH	14	E	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH	15	E	
NH	15	W	
NH	16	W	Adequate curb height, no improvement needed.
NH	16	E	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH	17	W	Adequate curb height, no improvement needed.
NH	17	E	Strip removal and reconstruction is warranted per the study criteria.
NH	18	N	Entirely new curb/sidewalk on both sides, no further work is required.
NH	18	S	
NH	19	N	Standard curb heights exist and lots are well elevated above the gutter, no improvements warranted.
NH	19	S	Standard curb heights exist, no improvements warranted.
NH	20	S	Then entire stretch of Monroe Ave from 33rd to 35th Street exhibits an undesirable combination of flat street grades and lots that are very poorly elevated above the gutters. A few segments have standard curb heights but most are sub-standard. Because this street has a continuous length of segments needing improvement, it is recommended that the entire segment be treated as a single improvement project involving some pavement reconstruction coupled with installation of new cross gutters on the crossing streets to take maximum advantage of all available elevation drop. Cost estimate will assume strip reconstruction for all substandard segments plus one cross gutter per segment.
NH	20	N	
NH	21	N	
NH	21	S	
NH	22	N	
NH	22	S	
NH	23	S	
NH	23	N	
NH	24	N	
NH	24	S	
NH	25	S	Very flat grades with ponding observed, but lots are well elevated above street.
NH	25	N	Very flat grades with ponding observed, but lots are well elevated above street. Slightly deficient curb height can be improved by pavement grinding.
NH	26	S	Adequate curb height, no improvement needed.
NH	26	N	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH	27	N	Curb in 3-5" range and high ped priority warrant pavement grinding.
NH	27	S	Pavement grinding is warranted similar to north side. Also, alley entrance at mid-block is a very bad sump. Alley is unpaved. Sidewalk has a 6" dropoff and probable flooding during storms. Improv. work is needed here to construct alley apron, ped ramps, and proper gutter. High ped demand.
NH	28	N	Grinding is warranted by mildly deficient curb heights and high ped demand. Cross gutter should be installed to convey flows from west to east across Cherokee St.
NH	28	S	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH	29	S	Adequate curb height, no improvement needed.
NH	29	N	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH	30	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	30	S	Strip removal and reconstruction is warranted per the study criteria.
NH	31	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	31	S	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	32	N	Adequate curb height, no improvement needed.
NH	32	S	
NH	33	E	Very flat grades and poorly elevated lots. Pavement grinding may provide benefits.
NH	33	W	Very flat grades and poorly elevated lots. However, runoff here is limited to local lot drainage only because the I-805 on-ramp captures any upstream flows. This segment is not recommended for any street modifications because any such work would impact the on-ramp and require extensive Caltrans coordination.
NH	34	E	Adequate curb height, no improvement needed.
NH	34	W	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH	35	E	
NH	35	W	
NH	36	W	Adequate curb height, no improvement needed.
NH	36	E	Grinding is warranted by mildly deficient curb heights and high ped demand.

Community	Block Designation	Side (N,S,E,W)	Notes
NH 37		W	Lots are very poorly elevated above street and grades are very flat, however curb height is nearly up to standard so no work is warranted on this side.
NH 37		E	Lots are very poorly elevated above street and grades are very flat, ponded water observed in gutter. Strip removal recommended instead of grinding because existing cross slope is already at the max. allowable of 5%.
NH 38		E	Very flat grades. Especially steep cross slopes indicate strip removal would be more appropriate than grinding. Since strip removal is required on both sides of this narrow street, with high ped demand, this block is recommended for full removal and replacement of pavement.
NH 38		W	Extensive ponding noted along gutter w/ moss growing in summer even in newly constructed segments. A curb ramp is needed at NW corner 36th & Monroe, but due to sump condition and ponding a cross gutter should be installed concurrently (if grades permit) to drain the corner across 36th St. Full removal and replacement recommended (see above).
NH 39		W	Adequate curb height and lots are elevated well above the street. Some new curb already exists.
NH 39		E	Slightly substandard curb height, houses poorly elevated above street, only front yards drain to street, rear yards drain to alley. Grinding recommended to regain curb height.
NH 40		E	Flat slope and lots are not well elevated above street. However, nearly all curbs have been replaced and sidewalks are in very good condition, so this block is not recommended for improvements.
NH 40		W	
NH 41		W	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH 41		E	Strip removal and reconstruction is warranted per the study criteria.
NH 42		N	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH 42		S	
NH 43		N	
NH 43		S	
NH 44		N	Adequate curb height, no improvement needed.
NH 44		S	
NH 45		N	
NH 45		S	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH 46		N	Adequate curb height, no improvement needed.
NH 46		S	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH 47		N	Adequate curb height, no improvement needed.
NH 47		S	Strip removal and reconstruction is warranted per the study criteria.
NH 48		N	Adequate curb height, no improvement needed.
NH 48		S	
NH 49		N	
NH 49		S	
NH 50		N	Nearly all-new curb & gutter on this block.
NH 50		S	
NH 51		N	New curb/sidewalk about to be constructed as part of new Normal Hts Elem School development.
NH 51		S	Curb less than 3 inches, strip removal/replacement recommended.
NH 52		S	Adequate curbs and slopes, no improvement required.
NH 52		N	New curb/sidewalk about to be constructed as part of new Normal Hts Elem School development.
NH 53		N	New curb/sidewalk about to be constructed as part of new Normal Hts Elem School development.
NH 53		S	Grinding recommended
NH 54		E	Extremely poor elevation of lots above street - some may even lie below gutter grade. Brand new sidewalk exists north of alley near Adams, so further improvement to the south affords the opportunity to complete a continous segment of good ped routes on a high-demand corridor. Grinding recommended to establish full standard curb height.
NH 54		W	
NH 55		E	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH 55		W	
NH 56		E	Adequate curb height, no improvement needed.
NH 56		W	
NH 57		E	Existing curb heights are adequate. See Section 5.4.6 of report for recommendations regarding storm drain improvements.
NH 57		W	
NH 58		E	Because of very high existing cross-slopes combined with very high ped demand for site adjacent to park, schools and commercial district, the improvement recommendation for this block has been upgraded to strip removal rather than grinding. **During final design, further consideration should be given to extending a storm drain 2 blocks northerly from Meade Ave** (not included in current cost estimate).
NH 58		W	
NH 59		E	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH 59		W	
NH 60		E	New curb/sidewalk about to be constructed as part of new Normal Hts Elem School development.
NH 60		W	Adequate curbs and slopes, no improvement required.
NH 61		E	
NH 61		W	
NH 62		N	
NH 62		S	
NH 63		N	Existing curb heights are adequate. See Section 5.4.6 of report for recommendations regarding storm drain improvements.
NH 63		S	
NH 64		N	Existing curb heights are adequate. See Section 5.4.6 of report for recommendations regarding storm drain improvements.
NH 64		S	
NH 65		N	Adequate curb height, no improvement needed.
NH 65		S	Grinding is warranted by mildly deficient curb heights and high ped demand.
NH 66		N	Adequate curb height, no improvement needed.
NH 66		S	
NH 67		E	Flat grades but fairly well elevated lots. Some curb/sidewalk has been newly constructed w/o causing drainage problems, so it appears additional work is not being precluded by street conditions. Not a large drainage basin, mostly local flow.
NH 67		W	
NH 68		E	See Section 5.4.6 of report. Pavement grinding combined with proposed drainage improvements are warranted on this high-demand segment.
NH 68		W	
NH 69		E	Street receives local runoff only, no upstream basin. Lows-lying pads and very flat slope.
NH 69		W	
NH 70		E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH 70		W	
NH 71		W	Adequate curb height, no improvement needed.

Community	Block Designation	Side (N,S,E,W)	Notes
NH	71	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	72	N	Adequate curb height, existing recent construction, no improvement needed.
NH	72	S	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	73	N	Adequate curb height, no improvement needed.
NH	73	S	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	74	E	
NH	74	W	Strip removal and reconstruction is warranted per the study criteria.
NH	75	N	Adequate curb height, no improvement needed.
NH	75	S	
NH	76	N	
NH	76	S	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NH	77	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	77	S	Strip removal and reconstruction is warranted per the study criteria.
NH	78	S	Adequate curb height, no improvement needed.
NH	78	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NH	79	N	
NH	79	S	Strip removal and reconstruction is warranted per the study criteria.
NH	80	N	Adequate curb height, no improvement needed.
NH	80	S	
NH	81	N	
NH	81	S	
NH	82	E	
NH	82	W	
NH	83	N	Mostly new curb & sidewalk exist along this block. **Note: The drainage facilities shown on the City's GIS mapping at the intersection of Hawley Blvd. and Collier Ave. do not exist**.
NH	83	S	
NH	84	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NH	84	S	
NH	85	S	Adequate curb height, no improvement needed.
NH	85	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NH	86	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NH	86	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NH	87	E	Adequate curb height, no improvement needed.
NH	87	W	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NH	88	E	
NH	88	W	
NH	89	E	
NH	89	W	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NH	90	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NH	90	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NH	91	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NH	91	S	
NH	92	N	Adequate curb height, no improvement needed.
NH	92	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NH	93	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NH	93	S	
NH	94	W	Adequate curb height, no improvement needed.
NH	94	E	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NH	95	N	Flat slopes and poorly elevated lots, would benefit from grinding, especially on the north side. Work in this block should be undertaken in conjunction with the proposed improvements at Hawley/North Mountain View.
NH	95	S	
NH	96	E	See Section 5.4.1 of report for proposed drainage improvements. No other street improvements are recommended for this block.
NH	96	W	
NH	97	E	Mostly new curb & sidewalk exist along this block.
NH	97	W	
NH	98	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NH	98	S	
NH	99	N	Eugene Pl has been constructed as essentially a concrete drainage channel, entirely paved with PCC. West of Raymond, paving is all-new. Sidewalks are good and most homes are well elevated above the street.
NH	99	S	
NH	100	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NH	100	S	
NH	101	E	Low ped demand in these segments would not warrant improvement except that this area is affected by the proposed work at North Mtn View Dr., which will direct increased runoff toward this cul-de-sac. Drainage improvements are recommended to capture this water and avoid agravating any flooding problems. See Section 5.4.1.
NH	101	W	
NH	102	S	
NH	102	N	
NP	1	E	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	1	W	
NP	2	N	This segment is actually a "paper street" across a canyon area; no physical improvements exist.
NP	2	S	
NP	3	N	Adequate curb height, no improvement needed.
NP	3	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	4	W	Adequate curb height, no improvement needed.
NP	4	E	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	5	N	No problem with curb heights here. Street is on edge of canyon. Possibly flows from Felton St. shoot across the intersection rather than going into inlet on the north side; this would be a problem for cars but not for peds.
NP	5	S	
NP	6	E	Houses on W side lie well below street. Curb was built up to 8-10" height apparently to act as a dam, but there's a driveway opening that probably allows most of the water to enter lots. This driveway could be raised to eliminate this problem. However, this is more a problem for the residents/property owners than area peds. Work is not warranted by the criteria of this study.
NP	6	W	School frornts on this segment. Curb heights are excellent, sidewalks are in good condition. No improvements required.
NP	7	E	Although this segment rated "low" in ped demand based on area attractors, its rating has been increased to "high" because it is

Community	Block Designation	Side (N,S,E,W)	Notes
NP	7	W	immediately adjacent to 2 schools. New curb ramps exist on all 4 corners. Ponded water observed in dry weather, could be corrected with a cross-gutter. Cross gutter cost is covered under segment NP10
NP	8	N	Adequate curb height, no improvement needed.
NP	8	S	
NP	9	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	9	S	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	10	N	Although this segment rated "low" in ped demand based on area attractors, its rating has been increased to "high" because it is immediately adjacent to 2 schools. New curb ramps exist on all 4 corners. Ponded water observed in dry weather, could be corrected with a cross-gutter.
NP	10	S	
NP	11	E	Bancroft Street is on a ridge line, with only front yards draining to the street, plus Redwood St is a divide so flows are very low. No evident reason for drainage complaints here. Ped demand is low.
NP	11	W	
NP	12	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	12	S	
NP	13	S	Extremely flat street slope near alley apron may be source of drainage complaints. Sidewalk could be raised at this location to get it above gutter flow, however due to low ped demand here, no improvement is recommended.
NP	13	N	No improvement warranted per study criteria.
NP	14	S	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	14	N	
NP	15	E	Moderate curb height and very good slope along this block. Cause of drainage complaints is not apparent unless it is overflow from Upas and Myrtle Streets.
NP	15	W	
NP	16	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	16	W	
NP	17	E	Bancroft Street is on a ridge line, with only front yards draining to the street, plus Redwood St is a divide so flows are very low. No evident reason for drainage complaints here. Ped demand is low.
NP	17	W	
NP	18	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	18	S	
NP	19	N	Adequate curb height, no improvement needed.
NP	19	S	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	20	N	Adequate curb height, no improvement needed.
NP	20	S	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	21	N	Adequate curb height, no improvement needed.
NP	21	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	22	S	
NP	22	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	23	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	23	W	
NP	24	E	Curb heights here are only slightly substandard (nearly 5"), adequate slope & no reported drainage issues and ped demand is only moderate. No improvement work is warranted.
NP	24	W	
NP	25	E	Standing water observed along much of the block due to extremely flat slope. However, curb height is fairly good and the ponding does not appear to be impacting ped routes. Low ped demand. Very high flow rates, large watershed.
NP	25	W	
NP	26	S	South side of street is within Balboa Park. Meandering sidewalks are not impacted by curb height or street conditions.
NP	26	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	27	S	South side of street is within Balboa Park. Meandering sidewalks are not impacted by curb height or street conditions.
NP	27	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	28	N	Adequate curb height, no improvement needed.
NP	28	S	South side of street is within Balboa Park. Meandering sidewalks are not impacted by curb height or street conditions.
NP	29	S	South side of street is within Balboa Park. Meandering sidewalks are not impacted by curb height or street conditions.
NP	29	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	30	N	
NP	30	S	South side of street is within Balboa Park. Meandering sidewalks are not impacted by curb height or street conditions.
NP	31	N	Very recent storm drain improvements completed along this section of Upas Street, along with new curb ramps at most corners from 28th Street to 30th Street. Also, a new streetscape improvements at 28th Street including curb underdrains. This work is likely to have resolved the reported drainage problems in this area. Recommend no further work in this street unless any new problems are reported.
NP	31	S	
NP	32	N	
NP	32	S	
NP	33	N	
NP	33	S	
NP	34	N	Adequate curb height, no improvement needed.
NP	34	S	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	35	N	
NP	35	S	Strip removal and reconstruction is warranted per the study criteria.
NP	36	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	36	S	
NP	37	N	Strip removal and reconstruction is warranted per the study criteria.
NP	37	S	
NP	38	N	Adequate curb height, no improvement needed.
NP	38	S	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	39	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	39	S	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	40	N	
NP	40	S	
NP	41	E	Adequate curb height, no improvement needed.
NP	41	W	
NP	42	E	
NP	42	W	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	43	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.

Community	Block Designation	Side (N,S,E,W)	Notes
NP	43	W	Strip removal and reconstruction is warranted per the study criteria.
NP	44	W	Adequate curb height, no improvement needed.
NP	44	E	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	45	E	Reported drainage problems appear to be the result of large watershed and flat slope. Recommended drainage improvements would be more beneficial here than surface reconstruction, especially since curb heights are relatively good.
NP	45	W	
NP	46	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	46	S	Strip removal and reconstruction is warranted per the study criteria.
NP	47	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	47	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	48	N	This block receives flows from a large watershed along 31st St. resulting in reported drainage problems. Could be corrected with installation of underground drainage, however system would need to extend for several blocks and would only benefit two segments that both have low ped demand. May be warranted to reduce street flooding but not warranted per the criteria of this study.
NP	48	S	
NP	49	E	Adequate curb height, no improvement needed.
NP	49	W	
NP	50	E	
NP	50	W	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	51	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	51	W	
NP	52	E	Adequate curb height, no improvement needed.
NP	52	W	
NP	53	E	Ponding at new curb ramp in dry weather. Looks like it could be corrected with a new cross-gutter.
NP	53	W	Confluence of a large drainage basin from Ray St. at this intersection - see Large Watersheds map.
NP	54	W	Adequate curb height, no improvement needed.
NP	54	E	Strip removal and reconstruction is warranted per the study criteria.
NP	55	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	55	S	
NP	56	N	Strip removal and reconstruction is warranted per the study criteria.
NP	56	S	
NP	57	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
NP	57	S	
NP	58	N	Adequate curb height, no improvement needed.
NP	58	S	
NP	59	N	
NP	59	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	60	N	Adequate curb height, no improvement needed.
NP	60	S	
NP	61	E	
NP	61	W	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	62	E	New curb ramp SE corner of Landis/30th contains standing water in dry weather. Even if street cannot be made to drain completely, consider adjusting pavement grades to create a small sump to the south - that way at least the ponding won't be occurring in the ramp.
NP	62	W	Small section of new curb & gutter mid-block. Looks like grinding would work to obtain drainage down to Dwight St., but would require adjusting lid of SDGE vault. New curb ramp at corner of Landis contains standing water in dry weather. Need pavement adjustment to make it drain.
NP	63	W	Good curb height, no evident problems.
NP	63	E	Good drainage but substandard curb height. Grinding may be warranted especially due to high ped demand. Minor ponding noted in cross gutter at Dwight/Grim.
NP	64	N	Adequate curb height, no improvement needed.
NP	64	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	65	N	Adequate curb height, no improvement needed.
NP	65	S	
NP	66	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	66	W	Strip removal and reconstruction is warranted per the study criteria.
NP	67	E	Large curb inlets on both sides of street at upper (North) end of block intercept all flows from upstream. Very adequate longitudinal slope. Extensive new curb has been constructed near mid-block, may have corrected the former perceived problems.
NP	67	W	
NP	68	E	Adequate curb height, no improvement needed.
NP	68	W	Strip removal and reconstruction is warranted per the study criteria.
NP	69	E	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	69	W	Strip removal and reconstruction is warranted per the study criteria.
NP	70	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	70	S	Strip removal and reconstruction is warranted per the study criteria.
NP	71	N	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	71	S	
NP	72	N	Adequate curb height, no improvement needed.
NP	72	S	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	73	N	
NP	73	S	
NP	74	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	74	S	
NP	75	E	Adequate curb height, no improvement needed.
NP	75	W	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	76	W	Adequate curb height, no improvement needed.
NP	76	E	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	77	E	South half of block has all-new streetscape; improvement recommendations address the north half only. See detail sketches for proposed reconstruction concepts. Ray Street is becoming extremely active with stores and night-time community events and should be given a high priority level for improvement.
NP	77	W	
NP	78	E	Adequate curb height, no improvement needed.

Community	Block Designation	Side (N,S,E,W)	Notes
NP	78	W	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	79	E	Adequate curb height, no improvement needed.
NP	79	W	
NP	80	E	
NP	80	W	
NP	81	S	
NP	81	N	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	82	N	Adequate existing curb, no improvement needed.
NP	82	S	Some substandard curb near businesses, storm drain nearby, high ped demand. **Study whether storm drain improvement is warranted**.
NP	83	S	Adequate curb height, no improvement needed.
NP	83	N	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	84	N	Adequate curb height, no improvement needed.
NP	84	S	
NP	85	S	
NP	85	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	86	E	Normal curb height, no improvement required.
NP	86	W	Flat slopes plus extensive buckling of curb & gutter has left numerous sumps along the street. Curb & gutter need replacement.
NP	87	E	GIS data shows inlets at intersection of Polk/Ohio, but no inlets were visible anywhere in the area. Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	87	W	Grinding is warranted by mildly deficient curb heights and moderate ped demand. Major redevelopment project underway on west side at time of study; verify condition of any new improvements prior to proceeding with design of remedial work.
NP	88	E	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	88	W	
NP	89	W	Adequate curb height, no improvement needed.
NP	89	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	90	E	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	90	W	
NP	91	E	Adequate curb height, no improvement needed.
NP	91	W	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	92	E	See separate write-up in drainage section about Texas Street at El Cajon Bl.
NP	92	W	
NP	93	E	Adequate curb height, no improvement needed.
NP	93	W	
NP	94	W	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	94	E	Strip removal and reconstruction is warranted per the study criteria.
NP	95	E	Adequate curb height, no improvement needed.
NP	95	W	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	96	E	Adequate curb height, no improvement needed.
NP	96	W	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	97	E	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	97	W	
NP	98	E	Adequate existing curb, no improvement needed.
NP	98	W	All-new curbs and sidewalks adjacent to Garfield Elementary School.
NP	99	E	See Kansas St. write-up, Section 5.4.5.
NP	99	W	
NP	100	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	100	W	
NP	101	N	Adequate curb height, no improvement needed.
NP	101	S	All-new curbs and sidewalks adjacent to Garfield Elementary School.
NP	102	N	"Corner-type" curb inlet at alley opening prevents construction of proper curb ramp. Could be replaced similar to south side.
NP	102	S	Grinding is warranted by mildly deficient curb heights and high ped demand.
NP	103	N	Due to recent improvements, the reported drainage issues on this block have probably been alleviated. Grinding is warranted to correct substandard curb height.
NP	103	S	Strip removal and reconstruction is warranted per the study criteria. In addition, see recommended drainage improvement in Section 5.4.5.
NP	104	E	Very flat slope but no major upstream tributary basin drains to this segment - only fronting property drainage. Source of drainage complaints is not apparent. Street condition does not warrant improvement per the criteria of this study.
NP	104	W	
NP	105	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	105	W	
NP	106	N	The most deficient curbs occur in the area receiving the alley flows, so additional improvement beyond pavement grinding should be considered in final design.
NP	106	S	Pavement grinding is warranted.
NP	107	N	Adequate curb height, no improvement needed.
NP	107	S	Strip removal and reconstruction is warranted per the study criteria.
NP	108	E	Very flat slope but no major upstream tributary basin drains to this segment - only fronting property drainage. Source of drainage complaints is not apparent. Street condition does not warrant improvement per the criteria of this study
NP	108	W	Very flat slope but no major upstream tributary basin drains to this segment - only fronting property drainage. Source of drainage complaints is not apparent. Per the criteria of this study, segments with no significant drainage issues and low pedestrian demand do not warrant improvement work.
NP	109	E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	109	W	
NP	110	N	
NP	110	S	
NP	111	N	
NP	111	S	Strip removal and reconstruction is warranted per the study criteria.

Community	Block Designation	Side (N,S,E,W)	Notes
NP	112	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	112	S	Strip removal and reconstruction is warranted per the study criteria.
NP	113	N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
NP	113	S	
NP	114	N	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
NP	114	S	
NP	115	E	Mostly new curbs and sidewalks on this block, no additional improvements needed.
NP	115	W	
SP	1	S	Adequate curb height, no improvement needed.
SP	1	N	Strip removal and reconstruction is warranted per the study criteria.
SP	2	S	Adequate curb height, no improvement needed.
SP	2	N	Strip removal and reconstruction is warranted per the study criteria.
SP	3	N	Adequate curb height, no improvement needed.
SP	3	S	
SP	4	N	
SP	4	S	
SP	5	N	
SP	5	S	
SP	6	N	
SP	6	S	Homes are elevated well above street, so that raising sidewalk if required does not present an engineering obstacle.
SP	7	N	This segment is actually a "paper street" across a canyon area; no physical improvements exist.
SP	7	S	
SP	8	N	Adequate curb height, no improvement needed.
SP	8	S	
SP	9	N	
SP	9	S	
SP	10	N	
SP	10	S	
SP	11	E	
SP	11	W	
SP	12	N	This segment is actually a "paper street" across a canyon area; no physical improvements exist.
SP	12	S	
SP	13	E	
SP	13	W	
SP	14	N	Adequate curb height, no improvement needed.
SP	14	S	
SP	15	N	
SP	15	S	
SP	16	W	
SP	16	E	Strip removal and reconstruction is warranted per the study criteria.
SP	17	E	This segment is actually a "paper street" across a canyon area; no physical improvements exist.
SP	17	W	
SP	18	N	Winding canyon-side cul-de-sac. Large retaining wall on one side and guard rail on the other. Probably not feasible to construct standard sidewalk improvements. Street does not go through or provide service to peds other than its own residents.
SP	18	S	
SP	19	E	Adequate curb height, no improvement needed.
SP	19	W	
SP	20	E	Winding canyon-side cul-de-sac. Large retaining wall on one side and guard rail on the other. Probably not feasible to construct standard sidewalk improvements. Street does not go through or provide service to peds other than its own residents.
SP	20	W	
SP	21	S	Adequate curb height, no improvement needed.
SP	21	N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
SP	22	N	Adequate curb height, no improvement needed.
SP	22	S	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP	23	E	Adequate curb height, no improvement needed.
SP	23	W	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
SP	24	W	Lots are elevated well above the street, so raising the sidewalk if required is not an engineering obstacle.
SP	24	E	Strip removal and reconstruction is warranted per the study criteria.
SP	25	E	With very good curb height and unusually steep slopes, drainage is not an impediment to any sidewalk improvements. Reported drainage problems in this block may relate to the mid-block sump inlets, both of which are 12' Type C inlets. Each inlet serves two city blocks and any blockage would result in flooding of residential lots. However, no pedestrian issues were observed.
SP	25	W	
SP	26	E	This segment is actually a "paper street" across a canyon area; no physical improvements exist.
SP	26	W	
SP	27	N	Adequate curb height, no improvement needed.
SP	27	S	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP	28	N	Adequate curb height, no improvement needed.
SP	28	S	
SP	29	N	
SP	29	S	
SP	30	N	
SP	30	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
SP	31	N	Adequate curb height, no improvement needed.
SP	31	S	No improvement warranted per study criteria because curb deficiency is mild (3-5") and ped demand is low.
SP	32	N	This segment is actually a "paper street" across a canyon area; no physical improvements exist.
SP	32	S	
SP	33	W	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP	33	E	Strip removal and reconstruction is warranted per the study criteria.

Community	Block Designation	Side (N,S,E,W)	Notes
SP 34		E	Standard curb heights, no improvement needed. New curb ramps exist at intersection of Grape/Edgemont, sidewalks in good condition.
SP 34		W	
SP 35		E	Street is not crowned, water from both sides flows along west curb, therefore east curb is not an engineering concern.
SP 35		W	Very steep longitudinal slope and low ped demand result in recommendation of no improvements
SP 36		E	Adequate curb height, no improvement needed.
SP 36		W	
SP 37		E	This segment is actually a "paper street" across a canyon area; no physical improvements exist.
SP 37		W	
SP 38		E	Adequate curb height, no improvement needed.
SP 38		W	
SP 39		E	Grinding is warranted by mildly deficient curb heights and high ped demand.
SP 39		W	Strip removal and reconstruction is warranted per the study criteria.
SP 40		E	Adequate curb height, no improvement needed.
SP 40		W	
SP 41		N	No curb or sidewalk exist. Only one home on north side, sitting high above street. No major impediment to sidewalk construction on this low-demand street.
SP 41		S	No curb or sidewalk exist. One home on south side, which lies below street level and drains to canyon in rear. Constructing curb or sidewalk would actually protect the property from street runoff.
SP 42		E	Completely unimproved street, no curbs, sidewalks or street paving. Only 2 houses on this block. Complete street improvements would be beyond the scope of this study and should probably be the responsibility of the residents via an assessment district if desired.
SP 42		W	
SP 43		S	Adequate curb height, no improvement needed.
SP 43		N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP 44		S	South side curb carries only local runoff, moderately deficient height, moderate ped demand, not a part of a longer series of improvements, recommend no pavement modification.
SP 44		N	North side curb can be increased by strip removal and replacement, which would be an extension of similar work upstream in segment SP47.
SP 45		S	Adequate curb height, no improvement needed.
SP 45		N	Strip removal and reconstruction is the recommended measure, but low priority due to low ped demand.
SP 46		W	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP 46		E	Strip removal and reconstruction is warranted per the study criteria.
SP 47		E	Grinding recommended per the study criteria.
SP 47		W	Strip removal and reconstruction is warranted per the study criteria.
SP 48		N	Adequate curb height, no improvement needed.
SP 48		S	Strip removal and reconstruction is warranted per the study criteria.
SP 49		N	See Section 5.4.2.
SP 49		S	
SP 50		N	The appropriate improvement here is strip removal/replacement, however, low ped demand indicates that this is a low-priority improvement unless combined with other nearby work.
SP 50		S	
SP 51		E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP 51		W	
SP 52		E	Adequate existing curb, no improvement needed.
SP 52		W	Strip removal and reconstruction is warranted per the study criteria. Flowline at north end should be low enough to provide drainage to segment S57.
SP 53		N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP 53		S	Strip removal and reconstruction is warranted per the study criteria.
SP 54		N	Grinding recommended per the study criteria.
SP 54		S	Strip removal and reconstruction is warranted per the study criteria.
SP 55		N	Though curb heights are substandard, this is a very short cul-de-sac with minimal ped demand, therefore no improvement work is recommended.
SP 55		S	
SP 56		E	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP 56		W	
SP 57		E	Curb heights are standard, no improvements required. New curb ramp at south end of block lacks domes.
SP 57		W	Low curb heights require strip reconstruction plus new cross gutter at south end of block.
SP 58		N	Adequate curb height, no improvement needed.
SP 58		S	The zero curb height on this block is intentional - the parking area of a retail shop occupies the entire frontage. A sidewalk and curb could be constructed along this frontage if desired.
SP 59		N	Grinding is warranted by mildly deficient curb heights and moderate ped demand.
SP 59		S	Strip removal and reconstruction is warranted per the study criteria.
SP 60		N	At the east end of block, reported drainage problem appears to be related to curb return on NE corner with no outlet. Const. of cross gutter could provide drainage to either the south or west, possibly in conjunction with the recommended strip removal and reconstruction.
SP 60		S	Strip removal and reconstruction is warranted per the study criteria.

The above data has been listed in **Table 7-2, Segment Improvement Costs**. Segments having no improvement recommendation have been omitted from the table. The data in the table has been sorted in order of priority, so that the items listed first in the table represent the highest priority improvements. In some cases, however, factors other than pedestrian demand should be considered in establishing the priority of work. Some recommended improvements, such as drainage upgrades, may offer benefits to several downstream segments in addition to the segment in which they are located. Also, segments of particular concern to community residents should be considered for early implementation even if their pedestrian demand rating is only moderate. The following are examples of segments or work items that may warrant a higher degree of priority than would be indicated by pedestrian demand alone.

Kansas Street Drainage Improvements: A relatively minor storm drain extension here provides protection to several city blocks, both in and out of the detailed study area. More expensive surface improvements to the south could be deferred because of the reduced storm flows resulting from this work.

Myrtle Avenue Drainage Improvements: At least six segments within the Detailed Study Area and several more outside the study area benefit from this improvement.

Hawley Blvd. / North Mountain View Drive improvements: In addition to having moderately high pedestrian demand, this intersection has been singled out by community representatives as having a particularly severe problem, with high levels of impact to pedestrian movement.

Ray Street: The block immediately south of University Ave. has become a popular pedestrian destination and a limited area of reconstruction is needed to close a gap in the revitalization of the North Park business district.

Total Priority Score

The recommended improvements shown on Table 7-2 are listed in order of "total priority score". This score was primarily based on the pedestrian priority rankings described above. However, an additional factor of 0 to 4 priority points was added depending on the severity of the observed curb height deficiency. The point system for severity of defects is shown in Table 7-3 below. An additional priority point value of 0 to 3 points was added to account for the value of drainage improvements, with the most beneficial drainage improvements receiving the higher point value. These point categories were totaled to arrive at the "total priority score," which was used as the basis for the final ranking.

TABLE 7-3
PRIORITY POINTS FOR
SEVERITY OF CURB DEFICIENCY

STREET SLOPE (%)	CURB HEIGHT CATEGORY			
	0 (No curb face)	*1* (0"-3")	*2* (3"-5")	*3* (5" or more)
< 0.3	4	3	2	0
0.4	3	3	2	0
0.5	3	2	1	0
0.6 to 1.0	2	1	0	0
>1.0	1	0	0	0

It may be advisable to delay improvements on segments having moderate or high levels of pedestrian demand if they are located adjacent to current or planned major redevelopments, because the redevelopment projects may construct many of the required upgrades at their own expense, allowing the City to redirect its resources elsewhere. Examples include several blocks undergoing large-scale redevelopment in the central business district of North Park, and the area surrounding the new Normal Heights Elementary School. Where permits or approved plans already showed street or sidewalk upgrades, this was taken into account in the improvement recommendations.

The improvement recommendation categories are also presented graphically on **Figure 1, Proposed Improvements** (see map pocket).

About half of the street segments in the study area were not recommended for any type of improvement. The most common reasons for a recommendation of “no improvement” were existing conditions that were found to be adequate, recently installed new improvements, or low pedestrian demand. **Table 7-4, Segments Not Recommended for Improvement** lists each of these segments with an explanation of why no improvement is proposed.

District 3 Sidewalk Study
Segment Improvement Costs
June 6, 2006

Community	Block Number	Side (N,S,E,W)	Address Range	Street	Priority Ranking: Pedestrian Priority	Priority Ranking: Severity of Deficiency	Priority Ranking: Drainage Priority	Priority Ranking: Total Priority Score	Pedestrian Ramps	Segment Length	Cross Gutters	Recommended Improvement	Surface Improvement Cost	Drainage or Misc. Cost	Description of Misc. or Drainage item	Total Raw Segment Construction Cost[2]	Improv Group Cost	Improv Group
NH	1	E	4300 - 4399	MCCLINTOCK	16	2		18	1	650		G	20,800			20,800		
NH	1	W	4300 - 4399	MCCLINTOCK	16	2		18	1	650		G	20,800			20,800		
NH	2	W	4300 - 4399	38TH	16	2		18	1	650		G	20,800			20,800		
NH	4	N	4300 - 4399	38TH	16	3		19	2	320	1	S	131,000			131,000		
NH	4	S	3550-3599	MEADE	16	3		19	2	320		S	115,600			115,600		
NH	5	S	3600-3649	MEADE	15	0		15	2	320		G	18,300			18,300		
NH	6	S	3650-3699	MEADE	15	0		15	2	320		G	18,300			18,300		
NH	6	N	3650-3699	MEADE	15	1		16	2	320	1	S	131,000			131,000		
NH	7	N	3700-3749	MEADE	16	1		17	2	320	1	S	131,000			131,000		
NH	7	S	3700-3749	MEADE	16	1		17	2	320		S	115,600			115,600		
NH	8	N	3750-3799	MEADE	16	0		16	2	320	1	G	33,700			33,700		
NH	8	S	3750-3799	MEADE	16	1		17	2	320	1	S	131,000			131,000		
NH	9	N	3800 - 3899	MEADE	15	0		15	2	340	1	G	34,100			34,100		
NH	9	S	3800 - 3899	MEADE	15	1		16	2	340		S	122,100			122,100		
NH	11	W	4400 - 4499	35TH	16	0		16		670		G	17,300			17,300		
NH	14	E	4400 - 4499	CHEROKEE	17	0		17	2	670	1	G	40,400			40,400	2,612,000	5
NH	15	E	4400 - 4499	37TH	17	0		17	2	670	1	G	40,400			40,400		
NH	15	W	4400 - 4499	37TH	17	0		17	2	670		G	25,000			25,000		
NH	16	E	4400 - 4499	MCCLINTOCK	17	0		17	2	670	1	G	40,400			40,400		
NH	17	E	4400 - 4499	38TH	17	2		19	2	670	1	S	244,200			244,200		
NH	20	N	3263-3320	MONROE	15	1		16	2	220	1	S	98,700			98,700		
NH	21	N	3328-3368	MONROE	15	1		16	4	320	1	S	138,700			138,700		
NH	21	S	3328-3368	MONROE	15	0		15	2	320		S	115,600			115,600		
NH	22	N	3376-3426	MONROE	16	0		16	2	330	1	S	134,200			134,200		
NH	22	S	3376-3426	MONROE	16	0		16	2	330		S	118,800			118,800		
NH	23	N	3430-3458	MONROE	16	0		16	2	330	1	S	134,200			134,200		
NH	24	S	3464-3499	MONROE	16	2		18	2	330		G	18,500			18,500		
NH	25	N	3500-3560	MONROE	17	1		18	4	495	1	G	44,800		New ped ramps @ alley as well as ends of block	44,800		
NH	26	N	3560-3599	MONROE	17	0		17	1	325	1	G	29,900			29,900		
NH	27	N	3600-3649	MONROE	17	0		17	4	325		G, O	26,100		New ped ramps @ alley as well as S end of block	26,100		
NH	27	S	3600-3649	MONROE	17	0		17	4	325		G	26,100	5,000	Reconstruct alley entrance & add ped ramps	31,100		
NH	28	N	3650-3699	MONROE	17	0		17	2	325		G	18,400			18,400		
NH	28	S	3650-3699	MONROE	17	0		17	2	325		G	18,400			18,400		
NH	29	N	3700-3749	MONROE	17	0		17	2	320		G	18,300			18,300		
NH	30	N	3750-3799	MONROE	16	0		16	2	320	1	G	33,700			33,700		
NH	30	S	3750-3799	MONROE	16	0		16	2	320		S	115,600			115,600		
NH	31	N	3800-3914	MONROE	16	0		16	2	320	1	G	33,700			33,700		
NH	31	S	3800-3914	MONROE	16	0		16	2	320		G	18,300			18,300		
NH	33	E	4500 - 4599	32ND	15	2		17	2	680		G	25,200			25,200	209,600	9
NH	34	W	4500 - 4599	34TH	17	2		19	2	700	1	G	41,000			41,000		
NH	35	E	4500 - 4599	HAWLEY	17	2		19	2	700	1	G	41,000			41,000		
NH	35	W	4500 - 4599	HAWLEY	17	2		19	2	700		G	25,600			25,600		
NH	36	E	4500 - 4599	35TH	17	2		19	2	725	1	G	41,500			41,500		
NH	37	E	4500 - 4599	WILSON	17	2		19	2	700		S	238,500			238,500		
NH	38	E	4500 - 4599	36TH	18	2		20	2	700	1	S	253,900			253,900		
NH	38	W	4500 - 4599	36TH	18	2		20	2	700	1	S, O	253,900			253,900		
NH	39	E	4500 - 4599	CHEROKEE	18	2		20	2	530		G	22,300			22,300		
NH	41	W	4500 - 4599	38TH	17	0		17	2	350	1	G	34,300			34,300		
NH	41	E	4500 - 4599	38TH	17	0		17	2	350		S	125,300			125,300		
NH	42	N	3200 - 3249	MADISON	17	2		19	2	320	1	G	33,700			33,700		
NH	42	S	3200 - 3249	MADISON	17	2		19	2	320		G	18,300			18,300		
NH	43	N	3250-3299	MADISON	17	2		19	2	320	1	G	33,700			33,700		
NH	43	S	3250-3299	MADISON	17	2		19	2	320	1	G	33,700			33,700	426,900	2
NH	45	S	3350-3399	MADISON	18	0		18	2	360		G	19,100			19,100	906,400	1
NH	46	S	3400-3425	MADISON	18	0		18	2	360		G	19,100			19,100		
NH	47	S	3450-3499	MADISON	18	1		19	1	360		S	124,700			124,700		
NH	51	S	3700-3799	EAST MOUNTAIN VIEW	19	1		20	2	350	0	S	125,300			125,300		
NH	53	S	3800-3899	EAST MOUNTAIN VIEW	16	2		18	2	390		G	19,600			19,600		
NH	54	E	4600 - 4699	32ND	18	2		20	3	860		G	32,500		New ped ramps @ alley as well as S end of block	32,500		
NH	54	W	4600 - 4699	32ND	18	2		20	3	860		G	32,500		New ped ramps @ alley as well as S end of block	32,500		
NH	55	E	4600 - 4699	34TH	19	2		21	2	850	1	G	43,900			43,900		
NH	55	W	4600 - 4699	34TH	19	2		21	2	850	1	G	43,900			43,900		
NH	58	E	4600 - 4699	35TH	19	2		21	2	900	2	S	334,000			334,000		
NH	58	W	4600 - 4699	35TH	19	2		21	0	900	1	S	310,900			310,900		
NH	59	E	4600 - 4699	CHEROKEE	19	2		21	3	850		G	32,300			32,300		
NH	59	W	4600 - 4699	CHEROKEE	19	2		21	4	850		G	36,200	2,600	Repave alley apron on west side	38,800		
NH	65	S	3400 - 3499	ADAMS	19	1		20		330		G	10,800			10,800		
NH	68	E	4700-4799	HAWLEY	17	2	1	20	1	765		D, G	23,000	173,600	See separate estimate, Adams Ave at Hawley	196,600	1,014,300	17
NH	68	W	4700-4799	HAWLEY	17	2		19	1	765		D, G	23,000			23,000		
NH	69	E	4700-4799	MANSFIELD	16	2		18	1	760		G	22,900			22,900		
NH	69	W	4700-4799	MANSFIELD	16	2		18	1	760		G	22,900			22,900		
NH	70	E	4700-4799	35TH	16	2		18	1	760		G	22,900			22,900		
NH	70	W	4700-4799	35TH	16	2		18	1	760		G	22,900			22,900		
NH	71	E	4700-4799	CHEROKEE	16	2		18	1	420		G	16,400			16,400		
NH	72	S	4742-4764	EAST MOUNTAIN VIEW	16	0		16		360		G	11,400			11,400		
NH	73	S	4714-4726	EAST MOUNTAIN VIEW	16	0		16		260		G	9,400			9,400		
NH	74	E	4701-4710	EAST MOUNTAIN VIEW	16	0		16	2	150	1	G	30,400			30,400		
NH	74	W	4706	EAST MOUNTAIN VIEW	16	1		17	1	150		S	56,800			56,800		
NH	76	S	3450-3499	COLLIER	14	3		17	1	320		S	111,800			111,800		
NH	77	N	3400-3499	COLLIER	15	2		17	2	320		G	18,300			18,300		
NH	77	S	3400-3499	COLLIER	15	3		18	2	320		S	115,600			115,600		

NH	78	N	3500-3599	COLLIER	15	2		17	2	320		G	18,300			18,300		
NH	79	N	3500-3599	COLLIER	15	0		15	1	140	1	G	26,400			26,400		
NH	79	S	3550-3599	COLLIER	15	1		16	2	140		S	57,400			57,400		
NH	85	E	4800-4899	35TH	13	3		16	2	630		S	215,900			215,900		
NH	86	N	3426-3499	COPLEY	13	3		16		300	1	S	116,800			116,800		
NH	89	W	4900-4999	35TH	12	3		15	2	605	1	S	223,200			223,200		
NH	90	N	3200-3299	NORTH MOUNTAIN VIEW	14	2		16	1	690		S	231,400			231,400		
NH	93	N	3426-3499	ARTHUR	11	3		14		300	1	S	116,800			116,800		
NH	93	S	3426-3499	ARTHUR	11	3		14		300		S	101,400			101,400		
NH	94	E	3350-3399	NORTH MOUNTAIN VIEW	13	3		16	2	620	1	S	228,000			228,000		
NH	95	N	3400-3449	NORTH MOUNTAIN VIEW	15	3	3	21	1	400		G, D	16,000	812,500	See separate estimate, Hawley/Mtn View	828,500	844,500	6
NH	95	S	3400-3449	NORTH MOUNTAIN VIEW	15	3		18	1	400		G, D	16,000			16,000		
NP	7	W	2700-2899	FELTON	12	0		12			1	D	19,800		Install cross gutter only	19,800		
NP	9	S	3250-3299	PALM	13	3		16		270	1	S	107,100			107,100		
NP	12	N	3250-3299	REDWOOD	14	3		17	2	280		S	102,700			102,700		
NP	12	S	3250-3299	REDWOOD	14	3		17	2	280		S	102,700			102,700		
NP	13	N	3300-3349	REDWOOD	14	3		17	2	280		S	102,700			102,700		
NP	15	E	3100-3299	30TH	16	0		16	2	660		G	24,800			24,800	969,900	14
NP	15	W	3100-3299	30TH	16	0		16	2	660		S	225,600			225,600		
NP	16	E	3100-3299	GRIM	15	2		17	2	640		G	24,400			24,400		
NP	16	W	3100-3299	GRIM	15	2		17	2	640	1	G	39,800			39,800		
NP	18	N	3000-3049	THORN	15	2		17	2	300	1	G	33,300			33,300		
NP	18	S	3000-3049	THORN	15	2		17	2	300		G	17,900			17,900		
NP	19	S	3050-3099	THORN	15	2		17	2	300	1	G	33,300			33,300		
NP	20	S	3100-3149	THORN	15	2		17	2	300		G	17,900			17,900		
NP	22	N	3200-3249	THORN	14	3		17		280		S	95,000			95,000		
NP	23	E	3300-3399	30TH	16	0		16	2	660	1	G	40,200			40,200		
NP	23	W	3300-3399	30TH	16	0		16	2	660	1	G	40,200			40,200		
NP	34	S	2900-2999	UPAS	16	2		18		170		G	7,700			7,700		
NP	35	N	3000-3049	UPAS	15	2		17	2	300	1	G	33,300			33,300	1,248,300	18
NP	35	S	3000-3049	UPAS	15	3		18	2	300		S	109,100			109,100		
NP	36	N	3050-3099	UPAS	15	2		17	2	300	1	G	33,300			33,300		
NP	36	S	3050-3099	UPAS	15	2		17	2	300		G	17,900			17,900		
NP	37	N	3100-3149	UPAS	15	3		18	2	300	1	S	124,500			124,500		
NP	37	S	3100-3149	UPAS	15	3		18	2	300		S	109,100			109,100		
NP	38	S	3150-3199	UPAS	13	3		16	2	300	1	S	124,500			124,500		
NP	39	S	3250-3299	UPAS	12	3		15	2	300	1	S	124,500			124,500		
NP	40	N	3250-3299	UPAS	12	3		15	2	300		S	109,100			109,100		
NP	40	S	3250-3299	UPAS	12	3		15	2	300	1	S	124,500			124,500		
NP	42	W	3400-3499	PERSHING	14	3		17	2	400		S	141,500			141,500		
NP	43	E	3400-3499	30TH	16	0		16	1	380		G	15,600			15,600		
NP	43	W	3400-3499	30TH	16	1		17	1	380	1	S	146,600			146,600		
NP	44	E	3400-3499	RAY	14	3		17	4	400	1	S	164,600			164,600		
NP	45	E	3400-3499	GRIM	15	2	2	19		300		D	0	282,800	See separate estimate, Myrtle Ave improvements	282,800	282,800	11
NP	45	W	3400-3499	GRIM	15	2		17		300		D	0			0		
NP	46	N	3000-3049	MYRTLE	15	0		15	2	300	1	G	33,300			33,300		
NP	46	S	3000-3049	MYRTLE	15	1		16	2	300	1	S	124,500			124,500		
NP	47	N	3050-3099	MYRTLE	14	1		15	2	300	1	S	124,500			124,500		
NP	50	W	3500-3599	PERSHING	14	3		17	2	640		S	219,100			219,100		
NP	51	E	3500-3599	30TH	16	0		16	1	380	1	G	31,000			31,000		
NP	51	W	3500-3599	30TH	16	0		16	1	380	1	G	31,000			31,000		
NP	53	E	3500-3599	GRIM	15	1		16	2	640		G, D	24,400			24,400		
NP	53	W	3500-3599	GRIM	15	1		16	2	640	1	G	39,800			39,800		
NP	54	E		30TH	16	1		17	2	380	1	S	150,400			150,400		
NP	55	N	3000-3049	DWIGHT	16	2		18	1	300	1	G	29,500			29,500		
NP	55	S	3000-3049	DWIGHT	16	2		18	1	300		G	14,100			14,100		
NP	56	N	3050-3099	DWIGHT	15	3		18	2	300	1	S	124,500			124,500		
NP	56	S	3050-3099	DWIGHT	15	3		18	2	300	1	S	124,500			124,500		
NP	57	N	3100-3149	DWIGHT	14	3		17	2	300	1	S	124,500			124,500		
NP	57	S	3100-3149	DWIGHT	14	3		17	2	300		S	109,100			109,100		
NP	62	E	3600-3699	30TH	17	0		17		380	2	G	42,500			42,500		
NP	62	W	3600-3699	30TH	17	0		17		380	2	G	42,500	2,000	Extra traffic control on 30th St	44,500		
NP	63	E	3600-3699	GRIM	17	0		17		650		G	16,900			16,900		
NP	66	E	3600-3799	30TH	16	0		16		380	1	G	27,100			27,100		
NP	66	W	3600-3799	30TH	16	1		17		380	1	S	142,700			142,700		
NP	68	W	3700-3799	PERSHING	16	3		19		660		S	217,900			217,900		
NP	69	E	3700-3799	30TH	17	0		17	1	380		G	15,600			15,600		
NP	69	W	3700-3799	30TH	17	1		18	1	380	1	S	146,600			146,600		
NP	70	N	2800-2849	NORTH PARK	16	1		17	1	280	1	G	29,100			29,100		
NP	70	S	2800-2849	NORTH PARK	16	2		18	1	280		S	98,800			98,800	518,500	7
NP	71	N	2850-2899	NORTH PARK	17	1		18	1	280	1	G	29,100			29,100		
NP	71	S	2850-2899	NORTH PARK	17	1		18	1	280	1	G	29,100			29,100		
NP	72	S	2900-2999	NORTH PARK	17	1		18		280		G	9,800			9,800		
NP	73	N	3000-3049	NORTH PARK	17	1		18		280		G	9,800			9,800		
NP	73	S	3000-3049	NORTH PARK	17	1		18		280		G	9,800			9,800		
NP	74	N	3000-3049	NORTH PARK	16	2		18	3	290	2	G	52,400		New ped ramps @ alley as well as E end of block	52,400	263,500	15
NP	74	S	3000-3049	NORTH PARK	16	2		18	2	290		G	17,700			17,700		
NP	75	W	3800-3899	PERSHING	17	2		19		320		G	10,600			10,600		
NP	76	E	3800-3899	30TH	17	0		17	1	395	1	G	31,300	5,000	Extra traffic control on 30th St	36,300		
NP	77	E	3800-3899	RAY	17	3	1	21				C	0	52,250	See separate estimate, Ray Street	52,250		
NP	77	W	3800-3899	RAY	17	3	1	21				C	0	52,250	See separate estimate, Ray Street	52,250		
NP	78	W	3800-3899	GRIM	16	2		18		360		G	11,400			11,400		
NP	81	N	2800-2899	LINCOLN	19	2		21		380		G	11,700			11,700		
NP	83	N	3000-3099	LINCOLN	17	2		19	2	380		G	19,400			19,400		
NP	85	N	3100-3149	LINCOLN	16	2		18	2	380		G	19,400			19,400		
NP	86	W	4000-4099	UTAH	18	0		18	2	680		S	232,000			232,000	952,500	8
NP	87	E	4000-4099	OHIO	16	0		16	2	670		G	25,000			25,000		
NP	87	W	4000-4099	OHIO	16	0		16	2	670		G	25,000			25,000		
NP	88	E	4100-4199	UTAH	17	0		17	2	680	1	G	40,600			40,600		

NP	88	W	4100-4199	UTAH	17	0		17	2	680	1	G	40,600			40,600		
NP	89	E	4100-4199	OHIO	16	0		16	1	670		G	21,200			21,200		
NP	90	E	4200-4299	UTAH	17	0		17	1	420	1	G	31,800			31,800		
NP	90	W	4200-4299	UTAH	17	0		17	1	420	1	G	31,800			31,800		
NP	91	W	4200-4299	OHIO	16	2		18	1	400	1	G	31,400			31,400		
NP	92	W	4300-4399	TEXAS	17	0	1	18	1	650		G	20,800	144,900	See separate estimate, Texas St drainage improvs.	165,700	165,700	10
NP	94	W	4300-4399	UTAH	18	0		18	2	715	1	G	41,300			41,300		
NP	94	E	4300-4399	UTAH	18	1		19	2	715		S	243,400	3,000	Extra traffic control at El Cajon Blvd.	246,400		
NP	95	W	4300-4399	KANSAS	18	2	1	21	1	715		G	22,000	266,000	See separate estimate, Kansas St. at Madison	288,000		
NP	96	W	4300-4399	ILLINOIS	16	0		16	1	670		G	21,200			21,200		
NP	100	E	4400-4499	ILLINOIS	15	2		17	2	1300	1	G	52,600			52,600		
NP	100	W	4400-4499	ILLINOIS	15	2		17	1	1300	1	G	48,700			48,700		
NP	102	N	2800-2899	MONROE	17	2		19	2	380	1	G,D	34,800			34,800	732,700	16
NP	102	S	2800-2899	MONROE	17	2	1	20	2	380	1	G	34,800	86,300	See separate estimate, Utah St drainage improvs.	121,100		
NP	103	N	2800-2849	MONROE	16	2		18		380		G	11,700			11,700	165,700	4
NP	103	S	2800-2849	MONROE	16	3	2	21		380		S, D	11,700	142,300	See separate estimate, Kansas St. at Monroe	154,000		
NP	105	E	4500-4599	OREGON	15	2		17	2	650	1	G	40,000			40,000		
NP	105	W	4500-4599	OREGON	15	2		17	2	650	1	G	40,000			40,000		
NP	106	N	3000-3099	MADISON	16	2		18	2	380	1	G	34,800			34,800		
NP	106	S	3000-3099	MADISON	16	2		18	2	380		G	19,400			19,400		
NP	107	S	3000-3099	MADISON	16	3		19	1	380		S	131,200			131,200		
NP	109	E	4600-4699	30TH	16	2		18	1	650		G	20,800			20,800		
NP	109	W	4600-4699	30TH	16	2		18	2	650		G	24,600			24,600		
NP	110	N	2600-2699	ADAMS	15	2		17	2	340	1	G	34,100			34,100		
NP	110	S	2600-2699	ADAMS	15	2		17	2	340		G	18,700			18,700		
NP	111	N	2700-2799	ADAMS	15	2		17	2	340	1	G	34,100			34,100		
NP	111	S	2700-2799	ADAMS	15	3		18	2	340		S	122,100			122,100		
NP	112	N	2700-2799	ADAMS	16	2		18	2	380		G	19,400			19,400		
NP	112	S	2700-2799	ADAMS	16	3		19	2	380		S	135,000			135,000		
NP	113	N	2700-2799	ADAMS	15	2		17	2	340	1	G	34,100			34,100		
NP	113	S	2700-2799	ADAMS	15	2		17	2	340		G	18,700			18,700		
SP	1	N	2950-2999	ASH	18	0		18	1	280		S	98,800			98,800		
SP	2	N	3000-3099	ASH	19	3		22	2	280	1	S	118,100			118,100	216,900	3
SP	16	E	1500-1599	31ST	16	0		16	2	380		S	135,000			135,000		
SP	21	N	2800-2849	DATE	14	3		17	1	280		S	98,800			98,800		
SP	22	S	2850-2899	DATE	15	0		15		280		G	9,800			9,800		
SP	23	W	1700-1799	29TH	14	0		14	2	370		S	131,800			131,800		
SP	24	E	1700-1799	FERN	16	0		16	2	370		S	131,800			131,800	949,800	13
SP	27	S	3000-3099	ELM	16	0		16		260		G	9,400			9,400		
SP	33	W	1800-1899	FERN	16	0		16	2	380	1	G	34,800			34,800		
SP	33	E	1800-1899	FERN	16	0		16	2	380	1	S	150,400			150,400		
SP	39	E	1900-1999	FERN	17	0		17	2	380	1	G	34,800			34,800		
SP	39	W	1900-1999	FERN	17	0		17	2	380	1	S	150,400			150,400		
SP	43	N	2900-2999	GRAPE	16	2		18	2	180		G	15,600			15,600		
SP	44	S	3000-3099	GRAPE	16	0	3	19		420		S	0	48,500	See separate estimate, Grape St.	48,500	48,500	12
SP	45	N	3250-3299	GRAPE	12	3		15	1	280	1	S	114,200			114,200		
SP	46	W	2000-2099	FERN	16	0		16	2	370	1	G	34,700			34,700		
SP	46	E	2000-2099	FERN	16	1		17	2	370	1	S	147,200			147,200		
SP	47	E	2000-2099	31ST	15	0		15	2	370		G	19,300			19,300		
SP	47	W	2000-2099	31ST	15	0		15	2	370		S	131,800			131,800		
SP	48	S	2900-2999	HAWTHORN	16	3		19	1	170		S	63,300			63,300		
SP	50	N	3100-3199	HAWTHORN	14	3		17	1	630	1	S	227,400			227,400		
SP	50	S	3100-3199	HAWTHORN	14	3		17	1	630		S	212,000			212,000		
SP	51	E	2100-2199	FERN	16	0		16	2	370		G	19,300			19,300		
SP	51	W	2100-2199	FERN	16	0		16	2	370	1	G	34,700			34,700		
SP	52	W	2100-2199	31ST	15	0		15		370		S	124,100			124,100		
SP	53	N	2900-2999	IVY	16	2		18	1	170		G	11,600			11,600		
SP	53	S	2900-2999	IVY	16	3		19	1	170		S	63,300			63,300		
SP	54	N	3000-3099	IVY	15	2		17	1	640		G	20,600			20,600		
SP	54	S	3000-3099	IVY	15	3		18	1	640		S	215,300			215,300		
SP	56	E	2200-2299	FERN	15	0		15	2	340		G	18,700			18,700		
SP	56	W	2200-2299	FERN	15	0		15	2	340	1	G	34,100			34,100		
SP	57	W	2200-2299	31ST	13	0		13		370		S	124,100			124,100		
SP	59	N	3000-3099	JUNIPER	15	2		17	1	640		G	20,600			20,600		
SP	59	S	3000-3099	JUNIPER	15	3		18	1	640		S	215,300			215,300		
SP	60	N	3100-3199	JUNIPER	12	3		15	2	640	1	S	234,500			234,500		
SP	60	S	3100-3199	JUNIPER	12	3		15	2	640		S	219,100			219,100		

Notes:

1 Segments recommended for "no improvement' have been omitted.

2 Raw segment construction cost does not include contingency, design fees, permitting costs or other soft costs.

K:\095240029\Excel\[Segment Improvement Cost.xls]Numeric order

Table 7-4

Explanation of Segments Not Recommended for Improvements

March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Reason for Recommendation of "No Improvements"
NH	2	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	3	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	5	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	10	both	Some new curb/sidewalk but much of the work needs replacement. However, residences are very well elevated above the street, so engineering issues do not appear to be preventing additional improvements.
NH	11	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	12	both	Nearly all-new curb and sidewalk on both sides of this block.
NH	13	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	14	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	16	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	17	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	18	both	All-new curb and sidewalk on both sides of this block.
NH	19	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	20	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	23	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	24	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	25	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	26	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	29	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	32	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	33	W	Freeway on-ramp captures nearly all runoff from west side other than lots fronting directly on this block, therefore drainage issues are not likely to be severe in spite of flat grades.
NH	34	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	36	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	37	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	39	W	Many new curb/sidewalk segments on this block. Houses on west side are well-elevated above street, indicating no serious engineering issues.
NH	40	E	New or recent construction has already been performed.
NH	40	W	New or recent construction has already been performed.
NH	44	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	45	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	46	both	Nearly all-new curb and sidewalk on both sides of this block.
NH	47	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	48	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	49	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	50	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	51	N	New curbs & sidewalks are currently proposed for construction as part of new Normal Hts Elementary School.
NH	52	N	New curbs & sidewalks are currently proposed for construction as part of new Normal Hts Elementary School.
NH	52	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	53	N	New or recent construction has already been performed.
NH	56	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	56	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	57	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	57	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	60	E	New curbs & sidewalks are currently proposed for construction as part of new Normal Hts Elementary School.
NH	60	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	61	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	62	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	63	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	64	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	65	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	66	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	67	both	Flat grades but homes are fairly well elevated above the street. Some new curb/sidealk has been newly constructed withouth causing a problem. Minor upstream drainage basin.
NH	71	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	72	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	73	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	75	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	76	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	78	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	80	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	81	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	82	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	83	both	Nearly all-new curb and sidewalk on both sides of this block.
NH	84	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	85	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	86	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	87	W	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	87	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	88	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	89	E	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	90	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	91	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	92	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	92	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	94	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	96	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	97	W	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	97	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NH	98	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NH	99	both	This street has already been improved quite recently with PCC pavement. Street has been designed to function as a drainage channel; flow runs down center of street rather than gutters. Houses on both sides are well-elevated above the street and good sidewalks exist.
NH	100	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.

NH 102	N	Proposed improvements related to Hawley-North Mtn. View are expected to prevent any problems here by capturing runoff upstream. This block is at the end of a long cul-de-sac, therefore low pedestrian demand.
NH 102	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 1	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 2	both	No physical improvements or residences. Canyon area. This right-of-way segment does not lead to any pedestrian destinations.
NP 3	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 3	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 4	E	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 4	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 5	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 6	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 8	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 9	N	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 11	both	This street lies on a ridge line, with runoff draining away on both sides. No apparent engineering issues were observed.
NP 13	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 14	N	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 14	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 17	both	This street lies on a ridge line, with runoff draining away on both sides. No apparent engineering issues were observed.
NP 19	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 20	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 21	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 21	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 22	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 24	W	Relatively good curb height. This block will benefit from the proposed Myrtle Ave drainage improvement.
NP 24	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction, although houses are level with or below curb elevation. This block will benefit from the Myrtle Ave. drainage improvement.
NP 25	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 26	N	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 26	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 27	N	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 27	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 28	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 29	N	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 29	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 30	S	Fronts on Balboa Park. Sidewalk on south side is meandering, not attached to curb, and not impacted by street conditions.
NP 30	N	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 31	both	Recent sidewalk & drainage improvements along Upas St. and new streetscape & curb outlets at 28th & Upas appear to have resolved reported drainage issues. Recommend no further need for improvement here unless new problems are reported in the future.
NP 32	both	Recent sidewalk & drainage improvements along Upas St. and new streetscape & curb outlets at 28th & Upas appear to have resolved reported drainage issues. Recommend no further need for improvement here unless new problems are reported in the future.
NP 33	both	Recent sidewalk & drainage improvements along Upas St. and new streetscape & curb outlets at 28th & Upas appear to have resolved reported drainage issues. Recommend no further need for improvement here unless new problems are reported in the future.
NP 34	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 38	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 39	N	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 41	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 42	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 44	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 47	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 48	both	Proposed Myrtle Ave. drainage improvement should resolve flooding issues in this block, eliminating immediate need for additional street improvements.
NP 49	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 50	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 52	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 54	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 58	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 59	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 59	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 60	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 61	W	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 61	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 63	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 64	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 64	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 65	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 67	both	Large curb inlets at upstream end of block and relatively good street slope indicate that drainage problems have likely been resolved. Extensive new curb/sidewalk at midblock has already been constructed, reducing the need for further improvements.
NP 68	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 72	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 75	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 76	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 78	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 79	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 80	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 81	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 82	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 83	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 84	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 85	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 86	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 89	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 91	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 92	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 93	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 95	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 96	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 97	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 98	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 101	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 101	S	All new curb, gutter, & sidewalk exist adjacent to Garfield Elem School.

NP 104	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 107	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
NP 108	W	Although street slope is very flat, this block has no upstream drainage basin nor any significant observed engineering issues.
NP 108	E	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 114	both	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
NP 115	both	Although street slope is very flat, this block already has mostly-new curb and sidewalk. Recommend no futher action unless new citizen complaints are received.
SP 1	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 2	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 3	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 3	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 4	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 4	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 5	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 5	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 6	S	Only half this block is improved as a street. Cul-de-sac doesn't lead to any further walking destinations to the east. Single home on south side sits well above street so curb/sidewalk construction is not impaired by engineering issues.
SP 6	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 7	both	Right-of-way crosses canyon with large grade differential. No physical improvements or residences exist on this segment. Construction of a pedestrian linkage is either infeasible or beyond the scope of this study.
SP 8	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 9	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 10	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 11	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 12	both	No physical improvements or residences. This right-of-way segment does not lead to any pedestrian destinations.
SP 13	both	No physical improvements or residences. This right-of-way segment does not lead to any pedestrian destinations.
SP 14	both	No physical improvements or residences. This right-of-way segment does not lead to any pedestrian destinations.
SP 15	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 16	W	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 17	both	No street improvements exist on this segment.
SP 18	both	Winding canyon cul-de-sac, does not lead to any pedestrian destinations other than serving its own residents. Due to steep terrain, sidewalk construction here would be prohibitively difficult and of little benefit due to low traffic.
SP 19	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 20	both	Extension of the same cul-de-sac as SP18, see above.
SP 21	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 22	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 23	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 24	W	West side houses are highly elevated above street. Curb and sidewalk could easily be raised above existing elevations without impacting residences.
SP 25	both	Very steep street leading to mid-block sump inlets. Reported drainage problems may relate to inadequate size of mid-block curb inlets (12' Type C inlets, both sides) however curb heights are standard and do not appear to prevent sidewalk improvements from occuring.
SP 26	both	No physical improvements or residences. Canyon area. This right-of-way segment does not lead to any pedestrian destinations.
SP 27	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 28	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 29	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 30	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
SP 30	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 31	S	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
SP 31	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 32	both	No street improvements exist on this segment.
SP 34	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 35	both	Very steep street, grades not conducive to pedestrian movement, however full-height curbs exist and drainage is good - no apparent impediment to sidewalk upgrade projects.
SP 36	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 37	both	No physical improvements or residences. Canyon area. This right-of-way segment does not lead to any pedestrian destinations.
SP 38	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 40	both	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 41	N	No curb exists. Residences are elevated above street although one house would need to modify driveway to construct full-height curb.
SP 41	S	No curb exists. Property on south side sits below street and drains to rear, so adding curb and sidewalk would not negatively impact them.
SP 42	both	Completely unimproved street; no paving, curbs or sidewalks. Only two houses on this partial block. Improvements here would benefit no pedestrians except the two homeowners on the block and would be costly since all-new construction is required.
SP 43	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 45	S	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 48	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 49	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 52	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 55	both	This block is partially a canyon "paper street" and only a short cul-de-sac has actual improvements. No observed engineering issues. New curb ramps already exist on all 4 corners at 31st.
SP 55	N	Existing curb height is only mildly deficient (3" to 5" height) and ped demand is ranked low or moderate.
SP 57	E	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.
SP 58	S	Zero curb due to store parking which opens directly to street. Adequate street grades; no engineering issues.
SP 58	N	Existing curb height is equal to or greater than 5 inches, therefore little or no impediment to new sidewalk construction.

VIII. IMPROVEMENT RECOMMENDATIONS

8.1 Improvement Strategy

Table 7-2 presents the specific improvement recommendations for each street segment in the study area, with an individual cost for each segment listed in order of priority. However, in most cases it would be impractical to implement these half-block improvements as stand-alone projects. (The larger drainage improvements are an exception to this.)

A group of several block improvements, or improvement of an entire neighborhood in a single contract would draw much higher interest from contractors, resulting in more competitive bids. Mobilization, traffic control, and stormwater management could be handled more efficiently on a larger project, so overall project costs would be lower. Larger, combined projects also are likely to be better received by community residents, who usually prefer a limited period of construction to complete all the required work in their neighborhood, rather than piecemeal construction that takes many years to complete.

It is also necessary to package many of the segments together into a single construction package due to drainage considerations. Most of the improvements involve lowering the gutter grade along one side of a block. This new, lower gutter might not have a surface drainage outlet if the downstream segment isn't also lowered by a similar amount. Therefore, it is most feasible to create projects that involve a sequence of connected segments moving downstream along a flow path. This also has the benefit of creating continuous improved walking paths for pedestrians rather than isolated improved blocks.

The following is a list of recommended groupings of segment improvements that will work well from an engineering perspective. They are listed generally in order of priority based on the average pedestrian demand of their individual segments. However, as described in Section 7, some packages are considered to have a higher priority for reasons other than pedestrian demand.

8.2 Packages

See **Figure 11, Improvement Packages** (see map pocket), for a graphical layout of the improvement package groupings.

IMPROVEMENT GROUP 1
Location: Normal Heights (34^{th} & 35^{th} St.)
Segments: NH45, NH46, NH47, NH55, NH58, NH65
Cost: $906,000

IMPROVEMENT GROUP 2
Location: Normal Heights (Cherokee St.)
Segments: NH39, NH51, NH59, NH71, NH72-74, NH79
Cost: $427,000

IMPROVEMENT GROUP 3
Location: South Park (Ash St.)
Segments: SP1 & 2
Cost: $217,000

IMPROVEMENT GROUP 4
Location: North Park (Kansas St.)
Segments: NP103, first phase of Kansas St. drainage improvements
Cost: $166,000

IMPROVEMENT GROUP 5
Location: Normal Heights
Segments: NH14-17, NH20-31, NH34-38, NH41, NH53
Cost: $2,612,000

IMPROVEMENT GROUP 6
Location: Normal Heights (Hawley Blvd.)
Segments: NH95
Cost: $845,000

IMPROVEMENT GROUP 7
Location: North Park (North Park Way)
Segments: NP69, NP70-73, NP76-77
Cost: $519,000

IMPROVEMENT GROUP 8
Location: North Park (Utah St.)
Segments: NP86, NP88, NP90, NP94-95
Cost: $953,000

IMPROVEMENT GROUP 9
Location: Normal Heights (32^{nd} St.)
Segments: NH33, NH42-43, NH54
Cost: $210,000

IMPROVEMENT GROUP 10
Location: North Park (Texas St.)
Segments: NP92
Cost: $166,000

IMPROVEMENT GROUP 11
Location: North Park (Myrtle Ave.)
Segments: NP45
Cost: $283,000

IMPROVEMENT GROUP 12
Location: South Park (Grape St.)
Segments: SP44
Cost: $49,000

IMPROVEMENT GROUP 13
Location: South Park (Fern St.)
Segments: SP24, SP27, SP33, SP39, SP43-44, SP46, SP48, SP51, SP53
Cost: $950,000

IMPROVEMENT GROUP 14
Location: North Park (30th St.)
Segments: NP15, NP23, NP34, NP43, NP51, NP54, NP62, NP66
Cost: $970,000

IMPROVEMENT GROUP 15
Location: North Park (Ohio St.)
Segments: NP74, NP78, NP83-85, NP87, NP89, NP91
Cost: $264,000

IMPROVEMENT GROUP 16
Location: North Park (Monroe and Madison Sts.)
Segments: NP102, NP105-107, NP109, second phase of Kansas St. drainage improvements
Cost: $733,000

IMPROVEMENT GROUP 17
Location: Normal Heights (Mansfield/Collier)
Segments: NH68-70, NH76-78, NH85, NH89
Cost: $1,014,000

IMPROVEMENT GROUP 18
Location: North Park (Grim Ave.)
Segments: NP35-36, NP44-45, NP53, NP55-57, NP63
Cost: $1,248,000

8.3 Scheduling Considerations

The work packages identified here can be constructed as stand-alone projects in the approximate order of priority as listed. However, we recommend coordination with other public agencies and private developers to maximize the efficiency of the improvement program. In particular, coordination is advised with the following parties:

- City Water Department / Metro Wastewater. These departments have an on-going program to replace older water and sewer mains, referred to as “Group Jobs”. These projects typically involve extensive street reconstruction as part of utility replacement projects, and some of the projects currently in the planning process involve the detailed study area. For example, Group Job 767 is located in Normal Heights and will affect many of the same streets as this project.
- SANDAG. Several transportation and transit planning projects are currently being considered that could be efficiently combined with some of the recommendations of this study. For example, SANDAG is studying development of a bus rapid transit system that would construct stations along El Cajon Blvd. Some of these stations involve reconstruction of adjacent streets and sidewalks to enhance pedestrian access to the stations. There may be efficiencies available if the City can coordinate the work of this study with the station development.
- North Park Main Street. This group is actively addressing streetscape and pedestrian enhancements, primarily in the University Avenue corridor. Their proposed projects should be considered when scheduling street improvement work.
- Private developers. The mid-city area is currently experiencing a high level of construction activity, some of it involving redevelopment of entire city blocks within the study area. Coordination with the City’s Development Services department is strongly advised, to ensure that any required street modifications are performed as part of the adjacent development.

IX. COST ESTIMATES

An engineer's opinion of probable construction cost was prepared for each segment. These estimates used unit prices taken from recent comparable bids or other published sources. Some of the unit prices have been increased to account for recent surges in the cost of concrete, reinforced concrete pipe, etc.

Public construction contracts typically include a line item for "mobilization", to compensate the contractor for non-direct costs such as establishing a field office, invoicing, record keeping, etc. The bid prices for mobilization vary considerably, but a rate of about 7% could be considered average. An above-average mobilization rate of 10% of construction costs has been used in this report due to the fact that the proposed projects, unless grouped together into much larger CIP packages, represent relatively small work items. The contractor's overhead costs would therefore represent a larger fraction of total cost, and a somewhat larger mobilization charge is likely to be required to encourage a sufficient number of bidders.

In addition to raw construction costs, the estimates also include an allowance of 40% of construction cost for "soft" costs such as design, permitting, environmental review and mitigation, surveying, pavement coring, geotechnical analysis and other non-construction items, as well as construction management costs.

The very preliminary nature of this study cannot address the full range of engineering issues that may arise during design and construction. These include changes in design standards, discovery of unexpected sub-surface conditions, and identification of issues during final design that require expanding the scope of construction. To account for these factors, we recommend using a contingency factor of 35%. In addition, the costs are based on 2005 price levels and should be escalated for inflation to the year of actual construction.

Each half-segment cost estimate includes an allowance of $1,000 to account for miscellaneous items such as minor striping, adjusting valve well covers to grade or re-setting survey monuments as required. An allowance of $3.50 per linear foot for grinding, and $4 per linear foot for strip replacement, has been included to address the cost of traffic control and stormwater management. Each cross-gutter installation is assumed to have a raw construction cost of $8,000, and each curb ramp is estimated at $2,000. Finally, an allowance of $2,000 per block segment has been included to allow for removal and replacement of approximately 50 linear feet of damaged curb.

X. COMMUNITY OUTREACH

Community participation has been incorporated into each of the three phases of this study. Each of the three recognized communities within the study area boundaries was represented: Normal Heights, North Park and South Park. The first two of these are formal city planning districts and are represented by a planning group. One member of each planning group was designated to represent the planning group by reviewing draft report submittals and attending project status meetings. The third community, South Park, is technically part of the Greater Golden Hill planning area. However, Golden Hill is not entirely within Council District 3. As part of Golden Hill, South Park does not have its own formal community planning group, however design issues within the community are reviewed by the South Park Action Committee. For purposes of this study, a representative of the South Park Action Committee was designated to represent the community.

The working group consisting of the three community representatives met at the Normal Heights Community Center at the completion of each project phase to discuss the project progress and the conclusions reached in each phase. In addition, the community representatives participated in identifying the specific street segments to be included in the Detailed Study area. A progress presentation was made at a regular meeting of the North Park planning group.

Community input formed part of the basis for establishing the pedestrian priority level of each street as well as identifying specific problem areas. Normal Heights performed a survey of community residents asking which streets were most important to residents for walking, and requesting locations of known problems. In North Park, a similar survey was taken at the annual Street Fair, with respondents being invited to identify or describe locations in their neighborhood that present barriers to pedestrian movement. The responses were plotted on the project mapping. Additional input was obtained from the Adams Avenue Business Association.

Other community-based input was furnished by the City's Street Division. The Street Division provided GIS-based mapping of citizen complaints related to drainage issues. This information was combined with the information described above to compile the mapping of known problem areas.

Each of the participating community planning groups had an opportunity to review and comment on the Phase III Final Report of the District 3 Sidewalk Study. The study was approved by the respective community groups on the following dates:

Greater Golden Hill Community Planning Committee	September 13, 2006
Greater North Park Community Planning Committee	July 18, 2006
Normal Heights Community Planning Committee	June 6, 2006

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Normal Heights Community Planning Committee

4649 Hawley Boulevard San Diego, California 92116 (619) 284-2505

June 6, 2006

Jerry T. McKee, P.E.
City of San Diego
Traffic Engineering Division – Transportation
202 C Street (MS 609)
San Diego, CA 92101

Dear Mr. McKee,

This letter will affirm the decision of the Normal Heights Planning Committee on June 6, 2006 to approve the District 3 Sidewalk Study based on your presentation of the Phase III Draft Final Report.

This step represents a milestone of achievement in our community's efforts to address the serious infrastructure deficits that plague our streets and sidewalks. We recognize and appreciate the ongoing efforts you as the project manager have made to ensure that each of the communities in this study have had adequate opportunity to give meaningful input at every stage of development. Because of this, we actually have a product that meets the goals that we initially laid out in January 2000.

We believe that this study represents a credible and solid basis for seeking the needed funds to get these recommended improvements on the ground.

Sincerely,

Judy Elliot

Judy Elliot
Chair

Cc: John Morris, Kimley-Horn
SJohnson

Vicki Granowitz, Chair
Greater North Park Community Planning Committee
PO Box 4825
San Diego, CA 92164

July 24, 2006

Jerry McKee, Project Manger
City of San Diego
Department of Engineering & Capital Projects
1010 2nd Ave., Suite 1200
San Diego, CA 92104

Dear Mr. McKee:

On July 18, 2006, at our regularly scheduled Board meeting, the Greater North Park Community Planning Committee (GNPCPC) approved the Phase III Draft Final Report District 3 Sidewalk Study on Consent by a vote of 14-0-0.

The GNPCPC looks forward to continuing to work with the City as we increase the quality of life in North Park and thank you for your over two years of work on this very important study. If I can be of further assistance please so not hesitate to call me at 619-528-1183.

Sincerely,

Vicki Granowitz

Vicki Granowitz, Chair
Greater North Park Community Planning Committee

Greater Golden Hill Planning Committee
P.O. Box 620161
San Diego, CA. 92162

September 17, 2006

Jerry McKee
City of San Diego
202 West "C" Street
San Diego, CA 92101

Dear Mr. McKee:

On September 13, 2006 at our regularly scheduled general meeting the Greater Golden Hill Planning Committee approved the Phase III Final Report of the District 3 Sidewalk Study.

As the official planning advisory body for the Greater Golden Hill Community Planning Area, we feel this project has created an objective basis for much needed infra-structure improvements and will serve to improve the quality of life for residents and quality of business for merchants in this neighborhood.

Thank you for your hard work in developing this important document. Please feel free to contact me for additional information (619-295-1374).

Sincerely,

Pat Shields

Pat Shields
Chair, Greater Golden Hill Planning Committee

Figure 1 Proposed Improvements (map pocket)

Figure 11 Improvement Packages (map pocket)

Figure 12 Longitudinal Slopes of Streets (map pocket)

V. DRAINAGE ANALYSIS

5.1 Drainage Improvements

Although the primary focus of this study is surface improvements, it has become evident during the early stages of the study that many of the pedestrian challenges in the study area result from inadequate underground drainage systems. Several areas have been identified in which significant drainage basins – 8 to 10 city blocks in some cases – are drained via surface flow along streets with very flat grades. Where this is combined with substandard curb heights, frequent and prolonged inundation of sidewalks is to be expected during storms. Even where curb heights are near standard, some of these large drainage basins are capable of generating flows well above the carrying capacity of the gutters.

In several of these locations it may be possible to install an extension of a nearby storm drain system which would greatly mitigate downstream sidewalk flooding. It is likely that some of these storm drain upgrades could be performed for considerably less cost compared to extensive pavement reconstruction projects over several city blocks. The hydrologic field review has identified several locations where relatively simple drainage improvements could provide benefits over a wide area. It would, of course, be necessary to study the downstream storm drainage systems during final design to ensure that no unintended problems would be caused in the downstream communities.

The conditions under which drainage improvements may be recommended include:

- Areas where unusually large drainage basins drain onto a street with inadequate carrying capacity because of either low curb height or flat gradients.
- Areas in which chronic drainage problems affecting pedestrian movement have been reported by community groups or are reflected in City records.
- Isolated locations of unusually severe drainage problems affecting pedestrians. If the situation appears likely to cause other problems for the City, such as flooding of homes, it could be assigned a higher priority.
- Locations at which a nearby existing storm drain system can be modified with a relatively minor extension would be more likely to be recommended for improvement, although a more extensive drainage system could be proposed if it offered a high cost-benefit ratio.

5.2 Drainage Deficiencies

Many of the engineering issues that are interfering with sidewalk improvement work are related to drainage deficiencies. In addition, even along streets with adequate existing sidewalks the pedestrian environment may be impaired by substandard drainage conditions, such as ponding at corners and curb ramps or gutter flow that in some cases tops the curb during even moderate storms.

Pursuant to Task III-1, KHA performed a field reconnaissance of the drainage conditions of all streets in the detailed study area. Many of these streets had already been identified in earlier phases of the study as having drainage deficiencies on the basis of resident complaints, city records, or by specific request of the community groups. The goals of the field reconnaissance were:

- To identify the patterns of surface drainage throughout the community, and direction of gutter flow

- To establish the limits of drainage basins impacting streets within the study area
- To assess drainage conditions in those areas already identified as having drainage problems to attempt to identify the source of those problems, and potential solutions

In nearly all cases, causes of reported drainage problems were evident from the field investigation. The affected areas typically received runoff from a relatively large watershed of at least one city block, and frequently much more. Some streets within the detailed study area drain urban watersheds of over 30 acres with no underground storm drain system. In large storms, these basins could be expected to produce flows as high as 100 cubic feet per second of runoff.

The capacity of the streets to convey these large flows is limited by topography. Because of the level terrain of the mid-city community, most of the streets in the detailed study area have extremely flat longitudinal gradients. In some cases, the streets appear totally flat to the eye, and topographic measurements using survey equipment were required to determine the direction of flow. KHA performed field surveys at a number of critical locations to provide the required information. The field surveys revealed gradients much flatter than would be allowable for new construction, with many slopes at less than 0.2%, and some streets having literally no downhill slope at all. In the more severe cases of zero gradients it would be impossible for homeowners to construct new curb-and-gutter with slopes meeting City standards.

Finally, the existence of substandard curb heights due to many years of repaving projects has further reduced the carrying capacity of many streets, resulting in areas where sidewalk flooding would be expected to occur in even minor storms.

Other significant drainage deficiencies impacting pedestrian routes were identified in isolated locations of the study area. Specific recommendations for addressing these deficiencies are detailed in Section 5.4 below. Also, field investigation revealed that several of the drainage systems shown on the City's GIS storm drainage mapping do not actually exist. These locations have been noted in the segment notes included in Section 8 of this report.

5.3 Design Storm

The City Drainage Manual outlines the storm magnitudes (return periods) that should be used for preparing formal drainage studies and for design of storm drain facilities in the City. Underground storm drain systems are typically designed to provide open-channel conditions in 50 year storms. Street flow is designed to be contained within the right-of-way in 100 year storms to avoid damage to private property.

The above criteria are useful for design of new developments but do not provide suitable guidance for this study. Because of the flat terrain and low curbs, nearly every street in the detailed study area would fall short of the standard requirements, leaving no criteria for prioritizing improvements. Furthermore, few pedestrians would be likely to attempt a walk during a 50 year storm. It is more important to identify locations that are impacted by even routine storms. Therefore, the runoff estimates in this study include calculations based on a 1 year storm, which corresponds to the rainfall intensity that would be equaled or exceeded about once each year on average.

5.4 Drainage Basins

A number of blocks were found to serve unusually large drainage basins. These are shown on **Figure 2**, Major Drainage Basins. In almost every case, the very large watersheds have been the subject of citizen complaints regarding storm water. A few of these blocks have substantial slopes and some have even been constructed essentially as concrete channels, so the large watersheds don't necessarily result in substandard sidewalk conditions. For example, Florida Street (Block NP49) and Eugene Street (Block NH99) are both paved with concrete and have a swale down the center of the street rather than the typical crown, so that they function as channels. Although these conditions do not directly impact sidewalks, they still impair pedestrian movement since the deep rushing water in the center of such streets would be difficult for pedestrians to cross.

Even drainage basins of moderate size can present an obstacle to pedestrians during wet weather where the street grades are excessively flat or curb height is substandard. Table 5-1 presents a summary of the runoff carrying capacity of streets of various slopes and curb heights.

TABLE 5-1
CONVEYANCE CAPACITY OF STREETS
(IN CUBIC FEET PER SECOND)

STREET SLOPE (%)	CURB HEIGHT 1.5”	CURB HEIGHT 4”	CURB HEIGHT 6”
0	0	0	0
0.2	0.10	1.4	4.1
0.3	0.12	1.7	5.0
0.4	0.14	2.0	5.8
0.5	0.16	2.2	6.5
0.75	0.20	2.7	7.9
1.0	0.23	3.1	9.2
2.0	0.32	4.4	12.9

Table 5-2 lists blocks within the study area where significant sidewalk flooding could be expected based on either the size of the watershed or insufficient slope and curb height. Streets with zero or near-zero curb height have virtually no carrying capacity, so these have been excluded from the table.

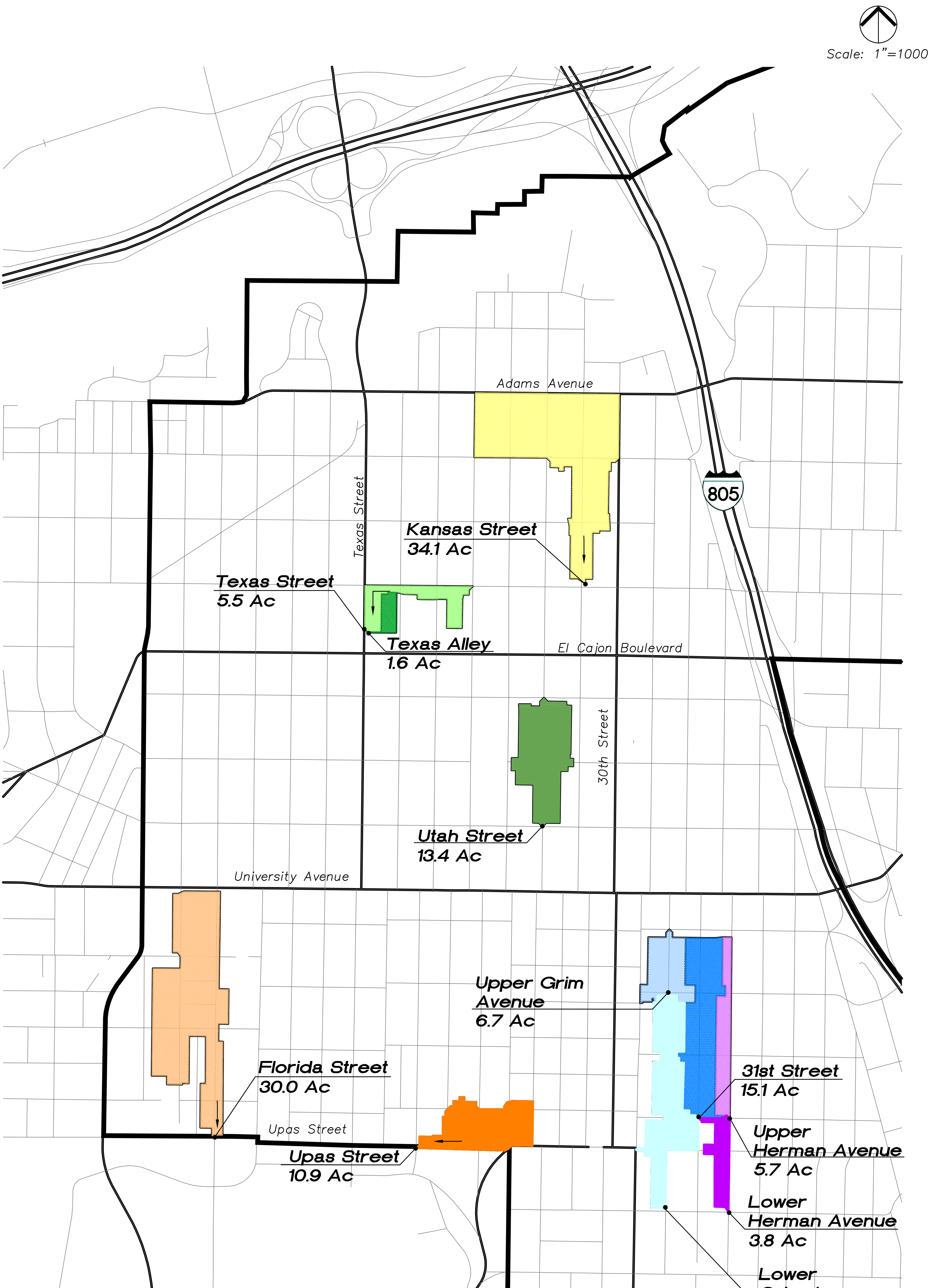

Figure 2

Major Drainage Basins

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NH	100	N	2	0.1
NH	100	S	2	0.1
NP	2	N	0	0.2
NP	2	S	0	0.2
NH	76	S	1	0.2
NH	77	S	1	0.2
NH	85	E	1	0.2
NH	86	N	1	0.2
NH	89	W	1	0.2
NH	93	N	1	0.2
NH	93	S	1	0.2
NH	94	E	1	0.2
NP	9	S	1	0.2
NP	12	N	1	0.2
NP	12	S	1	0.2
NP	13	N	1	0.2
NP	22	N	1	0.2
NP	33	S	1	0.2
NP	56	N	1	0.2
NP	56	S	1	0.2
NP	57	N	1	0.2
NP	57	S	1	0.2
NP	68	W	1	0.2
NP	107	S	1	0.2
NH	39	E	2	0.2
NH	42	N	2	0.2
NH	42	S	2	0.2
NH	43	N	2	0.2
NH	43	S	2	0.2
NH	77	N	2	0.2
NH	78	N	2	0.2
NH	84	N	2	0.2
NH	84	S	2	0.2
NH	86	S	2	0.2
NH	87	W	2	0.2
NH	88	E	2	0.2
NH	88	W	2	0.2
NH	89	E	2	0.2
NH	92	S	2	0.2
NH	98	N	2	0.2
NH	98	S	2	0.2
NP	4	E	2	0.2
NP	9	N	2	0.2
NP	10	N	2	0.2
NP	10	S	2	0.2
NP	13	S	2	0.2
NP	14	N	2	0.2
NP	16	E	2	0.2
NP	16	W	2	0.2
NP	18	N	2	0.2
NP	18	S	2	0.2
NP	19	S	2	0.2
NP	20	S	2	0.2
NP	21	S	2	0.2
NP	22	S	2	0.2
NP	25	E	2	0.2
NP	25	W	2	0.2
NP	55	N	2	0.2
NP	55	S	2	0.2

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NP	61	W	2	0.2
NP	75	W	2	0.2
NH	39	W	3	0.2
NH	48	N	3	0.2
NH	48	S	3	0.2
NH	57	E	3	0.2
NH	57	W	3	0.2
NH	75	N	3	0.2
NH	75	S	3	0.2
NH	76	N	3	0.2
NH	78	S	3	0.2
NH	80	N	3	0.2
NH	80	S	3	0.2
NH	82	E	3	0.2
NH	82	W	3	0.2
NH	83	N	3	0.2
NH	83	S	3	0.2
NH	85	W	3	0.2
NH	87	E	3	0.2
NH	92	N	3	0.2
NH	94	W	3	0.2
NP	4	W	3	0.2
NP	5	N	3	0.2
NP	5	S	3	0.2
NP	8	N	3	0.2
NP	8	S	3	0.2
NP	14	S	3	0.2
NP	19	N	3	0.2
NP	20	N	3	0.2
NP	21	N	3	0.2
NP	33	N	3	0.2
NP	61	E	3	0.2
NP	68	E	3	0.2
NP	75	E	3	0.2
NP	107	N	3	0.2
NP	115	E	3	0.2
NP	115	W	3	0.2
SP	6	S	0	0.3
SP	12	N	0	0.3
SP	12	S	0	0.3
SP	13	E	0	0.3
SP	13	W	0	0.3
SP	17	E	0	0.3
SP	17	W	0	0.3
SP	18	N	0	0.3
SP	18	S	0	0.3
SP	20	E	0	0.3
SP	20	W	0	0.3
SP	26	E	0	0.3
SP	26	W	0	0.3
SP	32	N	0	0.3
SP	32	S	0	0.3
SP	41	N	0	0.3
SP	41	S	0	0.3
SP	58	S	0	0.3
NH	4	N	1	0.3
NH	4	S	1	0.3
NH	95	N	1	0.3

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NH	95	S	1	0.3
NH	101	E	1	0.3
NH	101	W	1	0.3
NP	35	S	1	0.3
NP	103	S	1	0.3
SP	2	N	1	0.3
SP	21	N	1	0.3
SP	45	N	1	0.3
SP	48	S	1	0.3
SP	50	N	1	0.3
SP	50	S	1	0.3
SP	53	S	1	0.3
SP	54	S	1	0.3
SP	55	S	1	0.3
SP	59	S	1	0.3
SP	60	N	1	0.3
SP	60	S	1	0.3
NH	10	E	2	0.3
NH	10	W	2	0.3
NH	24	S	2	0.3
NH	33	E	2	0.3
NH	33	W	2	0.3
NH	34	W	2	0.3
NH	35	E	2	0.3
NH	35	W	2	0.3
NH	36	E	2	0.3
NH	37	E	2	0.3
NH	38	E	2	0.3
NH	38	W	2	0.3
NH	55	E	2	0.3
NH	55	W	2	0.3
NH	67	E	2	0.3
NH	67	W	2	0.3
NH	68	E	2	0.3
NH	68	W	2	0.3
NH	69	E	2	0.3
NH	69	W	2	0.3
NH	70	E	2	0.3
NH	70	W	2	0.3
NH	91	N	2	0.3
NH	91	S	2	0.3
NH	96	E	2	0.3
NH	96	W	2	0.3
NH	97	W	2	0.3
NP	34	S	2	0.3
NP	35	N	2	0.3
NP	36	N	2	0.3
NP	36	S	2	0.3
NP	48	N	2	0.3
NP	48	S	2	0.3
NP	81	N	2	0.3
NP	83	N	2	0.3
NP	85	N	2	0.3
NP	91	W	2	0.3
NP	95	W	2	0.3
NP	99	E	2	0.3
NP	99	W	2	0.3
NP	102	N	2	0.3

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NP	102	S	2	0.3
NP	103	N	2	0.3
NP	106	N	2	0.3
NP	106	S	2	0.3
NP	109	E	2	0.3
NP	109	W	2	0.3
SP	30	S	2	0.3
SP	31	S	2	0.3
SP	43	N	2	0.3
SP	49	S	2	0.3
SP	53	N	2	0.3
SP	54	N	2	0.3
SP	55	N	2	0.3
SP	59	N	2	0.3
NH	3	N	3	0.3
NH	3	S	3	0.3
NH	18	N	3	0.3
NH	18	S	3	0.3
NH	24	N	3	0.3
NH	34	E	3	0.3
NH	36	W	3	0.3
NH	37	W	3	0.3
NH	56	E	3	0.3
NH	56	W	3	0.3
NH	97	E	3	0.3
NP	34	N	3	0.3
NP	81	S	3	0.3
NP	82	N	3	0.3
NP	82	S	3	0.3
NP	83	S	3	0.3
NP	84	N	3	0.3
NP	84	S	3	0.3
NP	85	S	3	0.3
NP	91	E	3	0.3
NP	93	E	3	0.3
NP	93	W	3	0.3
NP	95	E	3	0.3
NP	98	E	3	0.3
NP	98	W	3	0.3
NP	101	N	3	0.3
NP	101	S	3	0.3
SP	2	S	3	0.3
SP	3	N	3	0.3
SP	3	S	3	0.3
SP	4	N	3	0.3
SP	4	S	3	0.3
SP	5	N	3	0.3
SP	5	S	3	0.3
SP	6	N	3	0.3
SP	11	E	3	0.3
SP	11	W	3	0.3
SP	14	N	3	0.3
SP	14	S	3	0.3
SP	15	N	3	0.3
SP	15	S	3	0.3
SP	21	S	3	0.3
SP	29	N	3	0.3
SP	29	S	3	0.3

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
SP	30	N	3	0.3
SP	31	N	3	0.3
SP	43	S	3	0.3
SP	45	S	3	0.3
SP	48	N	3	0.3
SP	49	N	3	0.3
SP	58	N	3	0.3
NP	77	E	0	0.4
NP	77	W	0	0.4
SP	7	N	0	0.4
SP	7	S	0	0.4
SP	37	E	0	0.4
SP	37	W	0	0.4
SP	42	E	0	0.4
SP	42	W	0	0.4
NP	37	N	1	0.4
NP	37	S	1	0.4
NP	38	S	1	0.4
NP	39	S	1	0.4
NP	40	N	1	0.4
NP	40	S	1	0.4
NP	42	W	1	0.4
NP	44	E	1	0.4
NP	50	W	1	0.4
NP	108	W	1	0.4
NP	111	S	1	0.4
NP	112	S	1	0.4
NH	1	E	2	0.4
NH	1	W	2	0.4
NH	2	W	2	0.4
NH	53	N	2	0.4
NH	53	S	2	0.4
NH	54	E	2	0.4
NH	54	W	2	0.4
NH	58	E	2	0.4
NH	58	W	2	0.4
NH	59	E	2	0.4
NH	59	W	2	0.4
NH	71	E	2	0.4
NP	39	N	2	0.4
NP	45	E	2	0.4
NP	45	W	2	0.4
NP	74	N	2	0.4
NP	74	S	2	0.4
NP	78	W	2	0.4
NP	100	E	2	0.4
NP	100	W	2	0.4
NP	105	E	2	0.4
NP	105	W	2	0.4
NP	108	E	2	0.4
NP	110	N	2	0.4
NP	110	S	2	0.4
NP	111	N	2	0.4
NP	112	N	2	0.4
NP	113	N	2	0.4
NP	113	S	2	0.4
NP	114	N	2	0.4
NP	114	S	2	0.4

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NH	2	E	3	0.4
NH	71	W	3	0.4
NP	38	N	3	0.4
NP	42	E	3	0.4
NP	44	W	3	0.4
NP	50	E	3	0.4
NP	78	E	3	0.4
NP	80	E	3	0.4
NP	80	W	3	0.4
SP	10	N	3	0.4
SP	10	S	3	0.4
SP	38	E	3	0.4
SP	38	W	3	0.4
NH	17	E	1	0.5
NH	90	N	1	0.5
NP	70	S	1	0.5
NH	25	N	2	0.5
NH	65	S	2	0.5
NH	90	S	2	0.5
NP	24	W	2	0.5
NP	53	E	2	0.5
NP	53	W	2	0.5
NP	70	N	2	0.5
NP	71	N	2	0.5
NP	71	S	2	0.5
NP	72	S	2	0.5
NP	73	N	2	0.5
NP	73	S	2	0.5
NH	17	W	3	0.5
NH	25	S	3	0.5
NH	60	E	3	0.5
NH	60	W	3	0.5
NH	62	N	3	0.5
NH	62	S	3	0.5
NH	63	N	3	0.5
NH	63	S	3	0.5
NH	64	N	3	0.5
NH	64	S	3	0.5
NH	65	N	3	0.5
NH	66	N	3	0.5
NH	66	S	3	0.5
NP	24	E	3	0.5
NP	52	E	3	0.5
NP	52	W	3	0.5
NP	72	N	3	0.5
NH	99	N	0	0.6
NH	99	S	0	0.6
NH	8	S	1	0.6
NH	9	S	1	0.6
NH	20	N	1	0.6
NH	21	S	1	0.6
NH	8	N	2	0.6
NH	9	N	2	0.6
NH	12	E	2	0.6
NH	12	W	2	0.6
NH	16	E	2	0.6
NH	21	N	2	0.6
NH	26	N	2	0.6

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NP	87	E	2	0.6
NP	87	W	2	0.6
NP	89	E	2	0.6
NH	16	W	3	0.6
NH	19	N	3	0.6
NH	19	S	3	0.6
NH	20	S	3	0.6
NH	26	S	3	0.6
NH	44	N	3	0.6
NH	44	S	3	0.6
NP	89	W	3	0.6
NH	7	N	1	0.7
NH	7	S	1	0.7
NH	79	S	1	0.7
NP	46	S	1	0.7
NP	47	N	1	0.7
NP	94	E	1	0.7
NH	5	S	2	0.7
NH	11	W	2	0.7
NH	14	E	2	0.7
NH	15	E	2	0.7
NH	15	W	2	0.7
NH	40	E	2	0.7
NH	40	W	2	0.7
NH	79	N	2	0.7
NP	46	N	2	0.7
NP	47	S	2	0.7
NP	94	W	2	0.7
NH	5	N	3	0.7
NH	11	E	3	0.7
NH	14	W	3	0.7
NH	6	N	1	0.8
NH	47	S	1	0.8
NH	51	N	1	0.8
NH	51	S	1	0.8
NH	102	N	1	0.8
NH	6	S	2	0.8
NH	45	S	2	0.8
NH	46	S	2	0.8
NH	102	S	2	0.8
NP	97	E	2	0.8
NP	97	W	2	0.8
NH	13	E	3	0.8
NH	13	W	3	0.8
NH	45	N	3	0.8
NH	46	N	3	0.8
NH	47	N	3	0.8
NP	43	W	1	0.9
NP	54	E	1	0.9
SP	46	E	1	0.9
NP	43	E	2	0.9
NP	51	E	2	0.9
NP	51	W	2	0.9
SP	46	W	2	0.9
SP	51	E	2	0.9
SP	51	W	2	0.9
SP	56	E	2	0.9
SP	56	W	2	0.9

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NH	61	E	3	0.9
NH	61	W	3	0.9
NP	54	W	3	0.9
NH	74	W	1	1.0
NP	66	W	1	1.0
NP	69	W	1	1.0
NH	23	N	2	1.0
NH	72	S	2	1.0
NH	73	S	2	1.0
NH	74	E	2	1.0
NP	62	E	2	1.0
NP	62	W	2	1.0
NP	66	E	2	1.0
NP	69	E	2	1.0
NH	23	S	3	1.0
NH	32	N	3	1.0
NH	32	S	3	1.0
NH	72	N	3	1.0
NH	73	N	3	1.0
NH	30	S	1	1.1
NH	27	N	2	1.1
NH	27	S	2	1.1
NH	29	N	2	1.1
NH	30	N	2	1.1
NH	31	N	2	1.1
NH	31	S	2	1.1
NP	11	E	2	1.1
NP	11	W	2	1.1
NP	17	E	2	1.1
NP	17	W	2	1.1
NP	23	E	2	1.1
NP	23	W	2	1.1
NP	90	E	2	1.1
NP	90	W	2	1.1
NP	92	W	2	1.1
NH	29	S	3	1.1
NP	92	E	3	1.1
NH	22	S	1	1.2
NH	22	N	2	1.2
NH	28	N	2	1.2
NH	28	S	2	1.2
NP	31	N	2	1.2
NP	31	S	2	1.2
NP	32	N	2	1.2
NP	32	S	2	1.2
NP	88	E	2	1.2
NP	88	W	2	1.2
NP	104	E	2	1.2
NP	104	W	2	1.2
NH	81	N	3	1.2
NH	81	S	3	1.2
NP	30	S	1	1.3
NP	30	N	2	1.3
NP	96	W	2	1.3
NH	49	N	3	1.3
NH	49	S	3	1.3
NH	50	N	3	1.3
NH	50	S	3	1.3

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation1	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NP	96	E	3	1.3
SP	52	W	1	1.4
SP	57	W	1	1.4
SP	52	E	3	1.4
SP	57	E	3	1.4
NP	26	N	2	1.5
NP	26	S	3	1.5
NP	76	E	2	1.6
NP	76	W	3	1.6
NH	41	E	1	1.9
NH	41	W	2	1.9
NP	63	E	2	1.9
NP	67	E	2	1.9
NP	67	W	2	1.9
NP	63	W	3	1.9
SP	23	W	1	2.0
SP	44	N	1	2.0
NP	86	W	2	2.0
SP	44	S	2	2.0
NP	6	E	3	2.0
NP	6	W	3	2.0
NP	79	E	3	2.0
NP	79	W	3	2.0
NP	86	E	3	2.0
SP	23	E	3	2.0
NH	52	N	2	2.2
NH	52	S	3	2.2
NP	27	N	2	2.5
NP	27	S	3	2.5
NP	41	E	3	2.5
NP	41	W	3	2.5
NP	15	W	1	2.6
NP	15	E	2	2.6
SP	47	W	1	2.7
SP	47	E	2	2.7
NP	59	S	2	3.4
NP	58	N	3	3.4
NP	58	S	3	3.4
NP	59	N	3	3.4
SP	24	E	1	3.5
SP	33	E	1	3.5
SP	39	W	1	3.5
SP	24	W	2	3.5
SP	33	W	2	3.5
SP	39	E	2	3.5
SP	1	N	1	3.7
SP	1	S	3	3.7
SP	27	S	2	3.9
SP	8	N	3	3.9
SP	8	S	3	3.9
SP	27	N	3	3.9
SP	28	N	3	3.9
SP	28	S	3	3.9
NP	3	S	2	4.2
NP	3	N	3	4.2
NP	7	E	1	5.0
NP	7	W	1	5.0
NP	28	N	3	5.0

Table 5-2
Sidewalk Flooding Potential
March 16, 2006

Community	Block Designation[1]	Side (N,S,E,W)	Curb Height Category	Longitudinal Slope (%)
NP	28	S	3	5.0
NP	49	E	3	5.2
NP	49	W	3	5.2
NP	1	E	2	6.0
NP	1	W	2	6.0
SP	22	S	2	6.3
SP	22	N	3	6.3
SP	36	E	3	6.3
SP	36	W	3	6.3
SP	16	E	1	6.5
SP	16	W	3	6.5
SP	34	E	3	6.7
SP	34	W	3	6.7
SP	35	E	3	6.7
SP	35	W	3	6.7
NP	64	S	2	7.1
NP	64	N	3	7.1
NP	65	N	3	7.1
NP	65	S	3	7.1
SP	9	N	3	7.7
SP	9	S	3	7.7
SP	40	E	3	9.3
SP	40	W	3	9.3
SP	25	E	3	10.0
SP	25	W	3	10.0
NP	29	N	2	11.3
NP	29	S	3	11.3
SP	19	E	3	12.0
SP	19	W	3	12.0
NP	60	N	3	12.5
NP	60	S	3	12.5

Notes:
1. Based on full carrying capacity of either curb-to-curb width or half-width, depending on local condition. Does not include maintaining a dry travel lane.
2. Not part of detailed study area; curb height and street slope are estimated.

K:\095240029\Excel\[Sidewalk Flooding Potential.xls]Numerical Order

The most severely impacted blocks are those serving the very large watersheds, as shown on Figure 2. The runoff in those areas cannot be contained within the street section, and in most cases even a one-year storm exceeds the street capacity. Furthermore, in the most severely overloaded locations, even raising the curbs to full 6 inch height will not provide sufficient capacity. **Table 5-3** provides a comparison of the carrying capacity of these streets and their estimated 1 year and 50 year flow rates.

TABLE 5-3
RUNOFF FROM LARGE WATERSHEDS

Watershed	Runoff (cfs) 1-year storm	50-year storm	Carrying Capacity of Receiving Street (cfs) (Existing curb height)	Carrying Capacity of Receiving Street (cfs) (With 6" curb height) [1]
Florida Street	22	58	55	55
Upas Street	5	12	8	14
Upper Grim Avenue	5	11	8	24
Lower Grim Avenue	11	27	4	6
31st Street	6	16	8	13
Upper Herman Avenue [2]	2.5	6	4	6
Lower Herman Avenue	10	25	3	4
Utah Street	7	18	14	26
Kansas Street	14	36	7	10
Texas Street	3	7	3	25
Texas Street with alley flow added	5	11	3	25

Notes:
1. Based on full carrying capacity of either curb-to-curb width or half-width, depending on local condition. Does not include maintaining a dry travel lane.
2. Not part of detailed study area; curb height and street slope are estimated.

5.5 Recommended Drainage Improvements

Some of the areas affected by poor drainage could be improved relatively easily by a limited extension of the existing local storm drain system. As part of the drainage review, Kimley-Horn identified a number of candidate locations for this type of improvement. In general, areas recommended for storm drain improvement are limited to those that are within about 100 to 200 feet of an existing system. However, a few longer extensions have been proposed in locations where the benefit is commensurate with the greater expense.

Unfortunately, parts of the study area have almost no access to nearby underground storm drain systems, and could be improved only by extension of a major trunk drain into the area. The central area of Normal Heights is the best example. While the construction of trunk drainage systems would be a valuable project, it was deemed to be beyond the scope of this study.

The following is a list of recommended improvement locations, followed by descriptions of each recommended improvement and its associated benefits.

- “Lake Hawley (Hawley Blvd. and North Mountain View Drive)
- Grape Street
- Texas Street
- Utah Street at Monroe
- Kansas Street
- Adams Avenue
- Myrtle Avenue
- Ray Street

5.5.1 “Lake Hawley”

The intersection of Hawley Blvd. and North Mountain View Drive was identified by the Normal Heights Community Association as having an especially severe chronic drainage problem. The intersection is equipped with non-standard “pass-through” drainage tubes at all four curb returns. These do not appear to provide any useful function since they are below the elevations of the adjacent gutters and partially plugged. KHA performed field surveys which revealed that some of the street pavement is actually above the adjacent sidewalk and residential property.

In addition, the adjacent streets lie at near-zero slopes. Some of the existing top-of-curb elevations near the curb returns were found to be at essentially the same elevation as the gutters 100 feet north of the intersection, indicating that positive surface drainage is not achievable under normal design standards. Also, the crowned centerline of North Mountain View Drive is higher than the sidewalks at the two southerly curb returns. Thus, the road essentially forms a dam that causes persistent flooding of the sidewalks and adjacent yards at the two south corners.

From an examination of the surrounding topography, it appears that this intersection was historically intended to drain toward the north. This drainage pattern was probably never well developed due to flat terrain, and years of repaving projects have added to the deficiency.

The recommended improvement work for this intersection has two goals:

1. Lower the elevation of the street gutters to an elevation below the adjacent sidewalks and residential lots, and;
2. Develop a positive drainage condition providing at least a minimal outlet for surface waters, since the survey data has established that surface drainage based on standard design criteria is not feasible.

The proposed improvement project consists of constructing new concrete cross gutters in a north-south direction across the intersection on both sides of Hawley Blvd. A strip of pavement would be removed and replaced along the sides of Hawley Blvd. and within the intersection to obtain positive drainage toward the north. It does not appear to be physically possible to achieve the City’s usual standard gutter slope of 0.6% in this location. It will be necessary to accept much flatter slopes and there is some possibility that minor ponding may occur along the north leg of Hawley Blvd. even after construction. However, this would be minor in nature and typically would not impact the ability of pedestrians to cross all four legs of the intersection, unlike the existing condition.

Because the project will re-establish the historic pattern of drainage toward the north, provisions should be made for intercepting this runoff at the north end of Hawley Blvd. (within Cromwell Place). This cul-de-sac is served by a pair of outlets, one at each end of the cul-de-sac. In addition, the two curb returns are equipped with non-standard “pass-through” drainage tubes similar to the ones that exist at North Mountain View Drive. The drainage tubes appear to provide little or no useful function. The proposed improvement at this location consists of new curb inlets at the north end of Hawley Blvd. to capture flows before they enter Cromwell Pl. A pipe would then convey the flows to the existing discharge system.

The entire block of Hawley Blvd. extending north to Cromwell Pl. is extremely flat. Even with the above improvements, there would still be a concern that on-going drainage issues might exist along the entire block. If possible, this situation could be mitigated by constructing an underground storm drain system incorporating new inlets at the N. Mountain View Dr. intersection, with a pipe extending to the outlet point at Cromwell Pl. It is unlikely that such a pipe could be constructed using standard minimum slopes, but a pipe with less-than-standard slopes could still represent a significant improvement. Obstacles to constructing this pipe should be investigated early in the final design process to verify that the installation is feasible. Because of the very limited elevation difference along the street, potholing should be performed to verify the elevation of the outlet pipes and any utility crossings. Also, locating a clear corridor for the new pipe could be a challenge, probably requiring relocation of an existing gas line.

Another step that could be addressed during final design would be a detailed field survey of all gutter elevations along this area to identify any low points. If any exist, they could be corrected as part of the proposed work. For purposes of a conceptual cost estimate, we have assumed a strip replacement along one entire side of the block, replacement of 250 feet of curb, and installation of an underground storm drain system from N. Mountain View Dr. to the outlet point at Cromwell Pl.

The proposed improvements are shown on **Figure 3, Hawley/North Mountain View Improvements**.

5.5.2 Grape Street

The drainage outlet for Segment SP49 is located at a low point along Grape Street in South Park. This location is in a canyon crossing where the street slopes down steeply from each side. The runoff is collected by curb inlets on both sides of the street which are not large enough to handle large storms without overflowing. Of particular concern is the south side of the street, where there is a near-zero curb height, resulting in probable frequent flooding of the sidewalk. The adjacent residential properties lie below the street, so in addition to the sidewalk flooding, the storm flows also have the potential to impact residences. Fortunately, an existing storm drain pipe is located directly beneath the existing inlets. The recommended improvement consists of enlarging the inlets and, on the south side, grinding the existing pavement to create an adequate gutter and curb height. Because of the potential for residential flooding, this project has been assigned a high level of improvement priority. See **Figure 4, Grape Street Drainage Improvement**.

5.5.3 Texas Street

Several unique conditions exist along segment NP92, which is Texas Street just north of El Cajon Blvd. In the mid-block area a pair of alleys enter the street from both sides. These alleys have relatively significant drainage areas of about 1.6 acres. The drainage from these alleys is estimated as 3 cfs for one-year storms, and 7 cfs for 50-year storms. Even the one-year flow from each alley equals the entire carrying capacity of the substandard gutter along Texas Street, without considering the other flows already being carried in the street. This problem is especially pronounced on the east side, which also serves an upstream basin of 5.5 acres.

On the west side of Texas Street, the upstream flows are not as great, but surface grades are defective, resulting in permanent ponding in the alley entrance which partially blocks pedestrian movement. The City's GIS storm drain mapping indicates a pair of inlets along Meade Avenue just west of Texas, which appear to provide protection to this segment. Field investigation revealed that the inlet on the south side of Meade does not exist, and only a small grated inlet exists on the north side.

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District 3 Sidewalk Study - Pase II

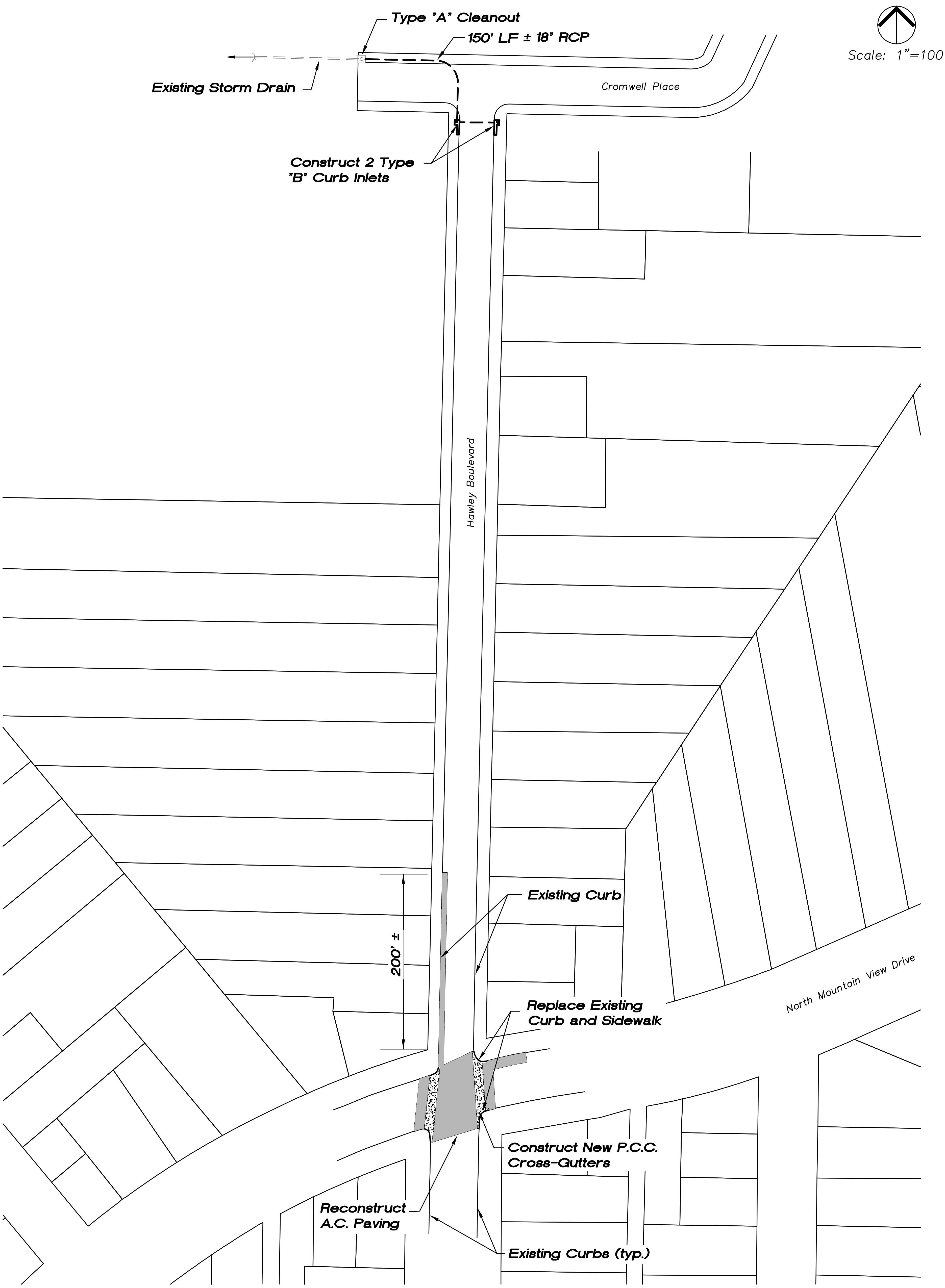

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Figure 3

Hawley/North Mountain View Improvements

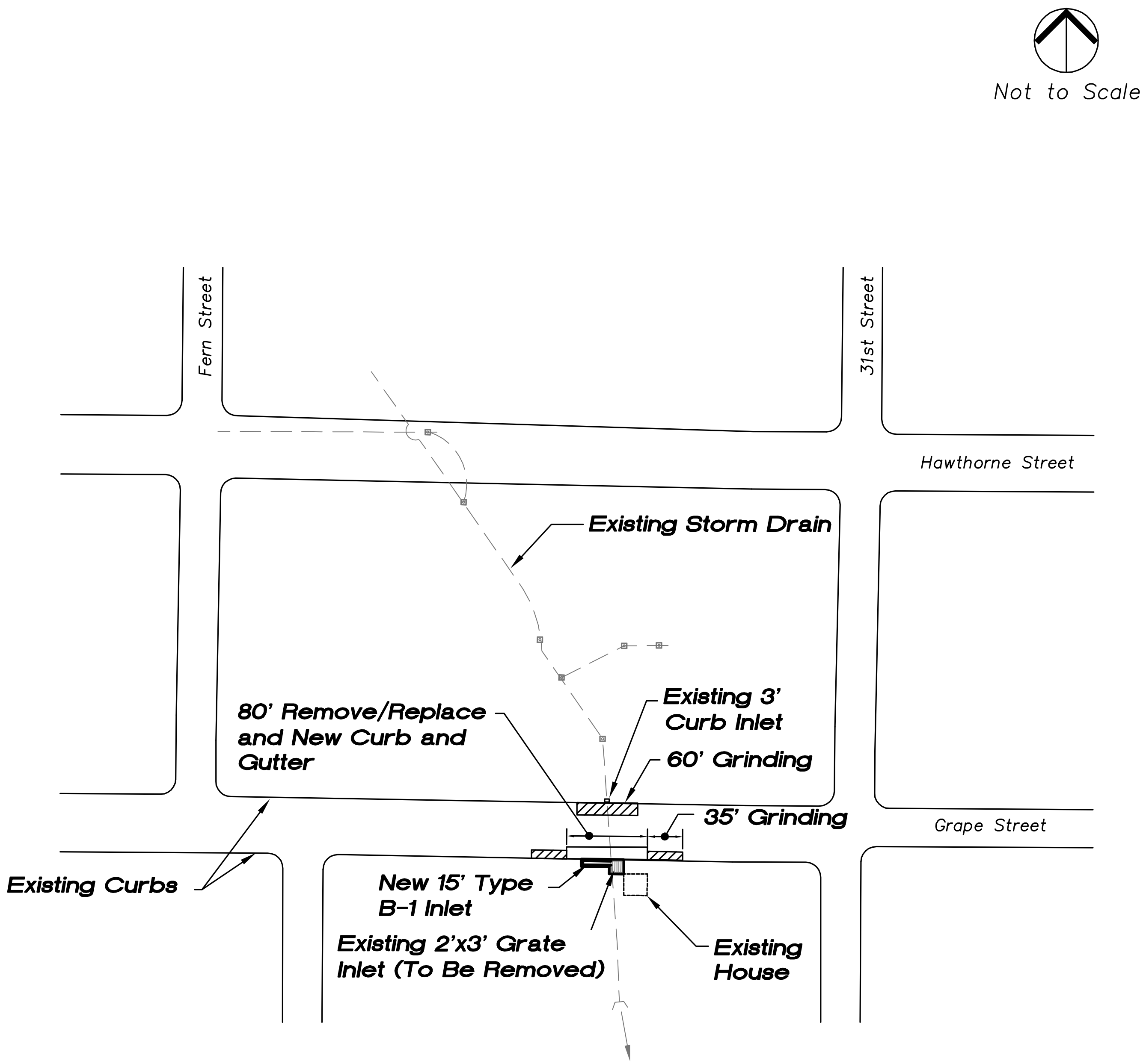

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Figure 4

Grape Street
Drainage Improvements

Installation of storm drain inlets here could provide two benefits: a curb inlet along the east side of Texas Street could capture the significant upstream flows, reducing the likelihood of flows topping the curb, and a grated inlet in the alley just upstream of the sidewalk could capture the alley flows, so that pedestrians would not need to walk through the stream of runoff from the alley. A connection point for such a system is available about 200 feet away at the intersection of El Cajon Blvd. See **Figure 5, Texas Street Drainage Improvement**.

Another undesirable pedestrian condition exists at the south end of the block, where Texas Street meets El Cajon Blvd. Here, non-standard "corner-type" curb inlets exist in the middle of all four curb returns. These inlets preclude the construction of standard curb ramps, and as a result no curb ramps exist at this busy intersection. The City has recently installed a new traffic signal pole at the northeast corner which further restricts installation of standard curb ramps. SANDAG has proposed the development of a bus rapid transit station at this intersection. If implemented, the station improvements could be coordinated with curb and drainage modifications to this intersection to add curb ramps and eliminate the barriers to pedestrians. It is recommended that the City coordinate with SANDAG transit staff regarding this location.

5.5.4 Utah Street at Monroe

The two southerly curb returns here (west end of segment NP103) are occupied by non-standard "corner-type" curb inlets which preclude construction of curb ramps. The installation of a pair of new Type B curb inlets immediately south of the curb return would allow these older, non-standard inlets to be removed and proper curb ramps to be installed. A severe pavement hump exists near the southeast curb return which does not impact pedestrian movement but does create a poor driving surface for vehicles. This defect could be readily corrected as part of this work. See **Figure 6, Utah Street Drainage Improvement**.

5.5.5 Kansas Street

The segment of Kansas Street identified as NP99 drains the largest single drainage basin (34.4 acres) of any segment in the Detailed Study Area. The estimated runoff for even one-year storms is well in excess of the street's carrying capacity, even if the curbs could be upgraded to full six inch height. In the existing condition, the 50-year runoff rate is about five times the capacity of the street. Furthermore, due to flat grades and limited inlet capacity on the north side of Adams Avenue, the basin may also receive overflow from areas north of Adams.

To resolve these problems, a storm drain extension has been proposed, as shown on **Figure 7, Kansas Street Drainage Improvements**. Because the lack of capacity is so severe at this location, two separate drainage connections are proposed, each of which would capture roughly half of the flows from the basin. However, the two connections will be listed as two separate projects in the list of Improvement Recommendations (Section 8) because if funding were only available to perform part of the work, the shorter and less costly connection provides the greater benefit by intercepting nearly the entire upstream basin.

The curb heights along segment NP99 are slightly substandard and might warrant improvement under the criteria of this study. However, the proposed drainage improvements would adequately mitigate the substandard curb condition, so no street improvements are proposed for this segment.

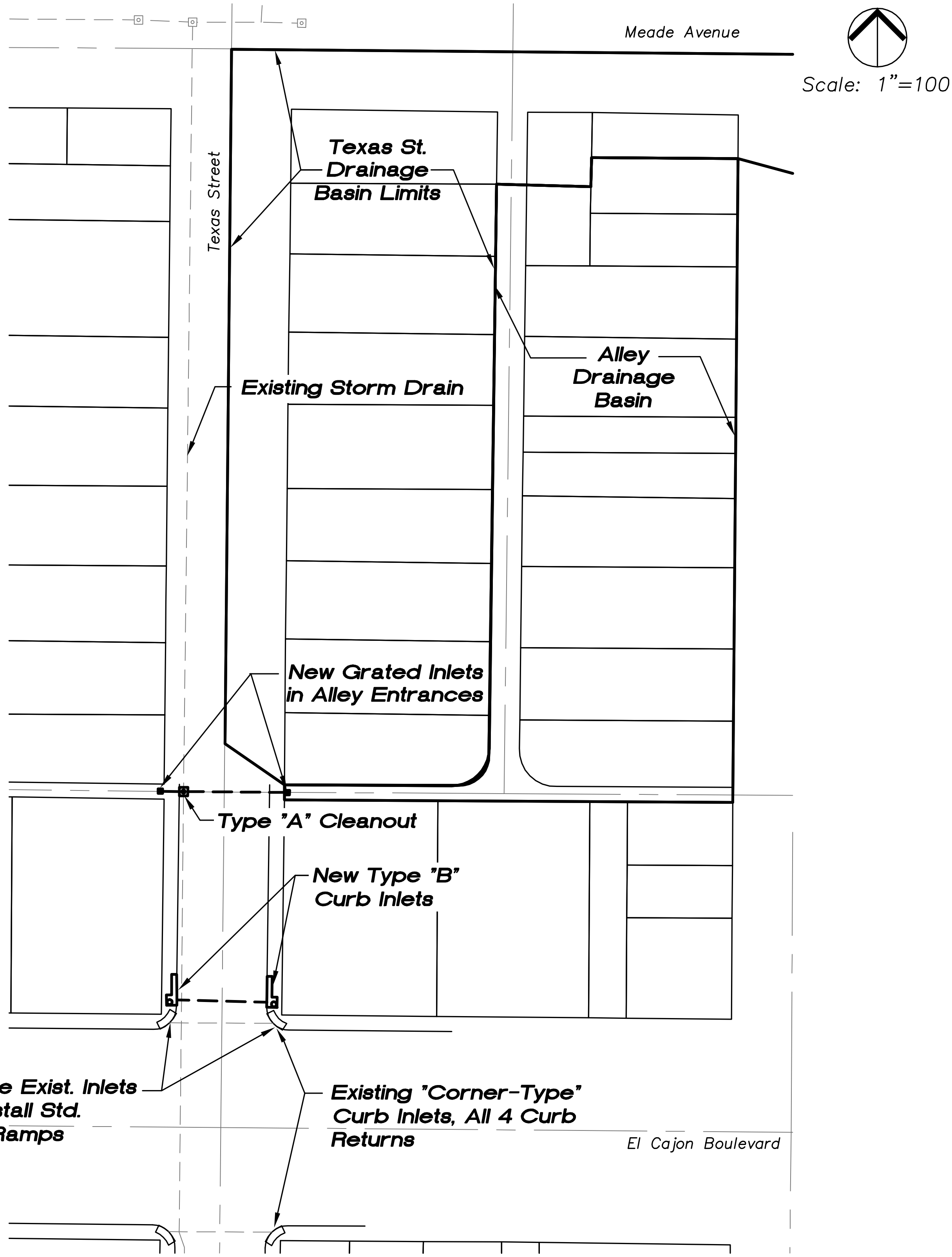

Figure 5

Texas Street Drainage Improvements

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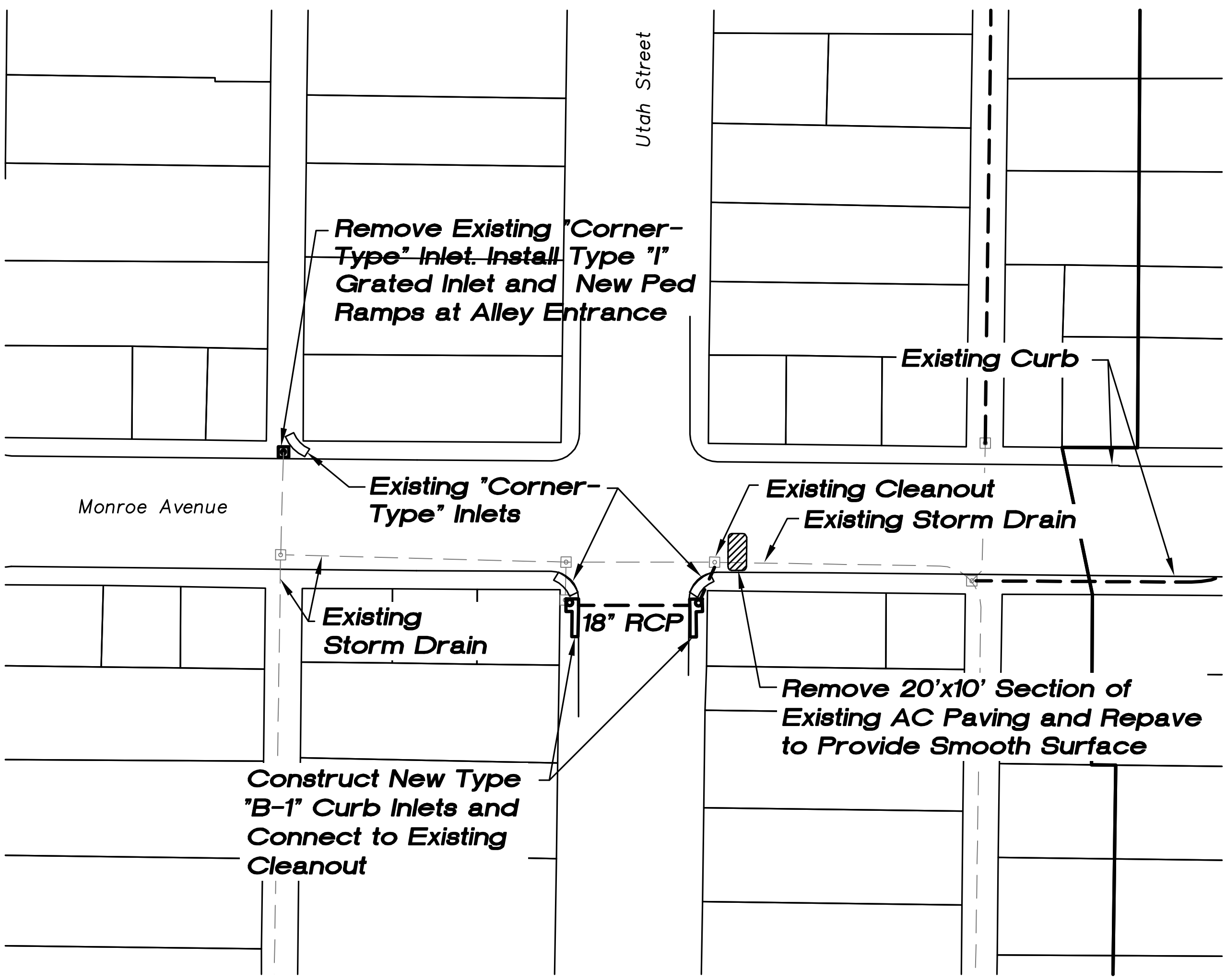

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Figure 6

Utah Street Drainage Improvements

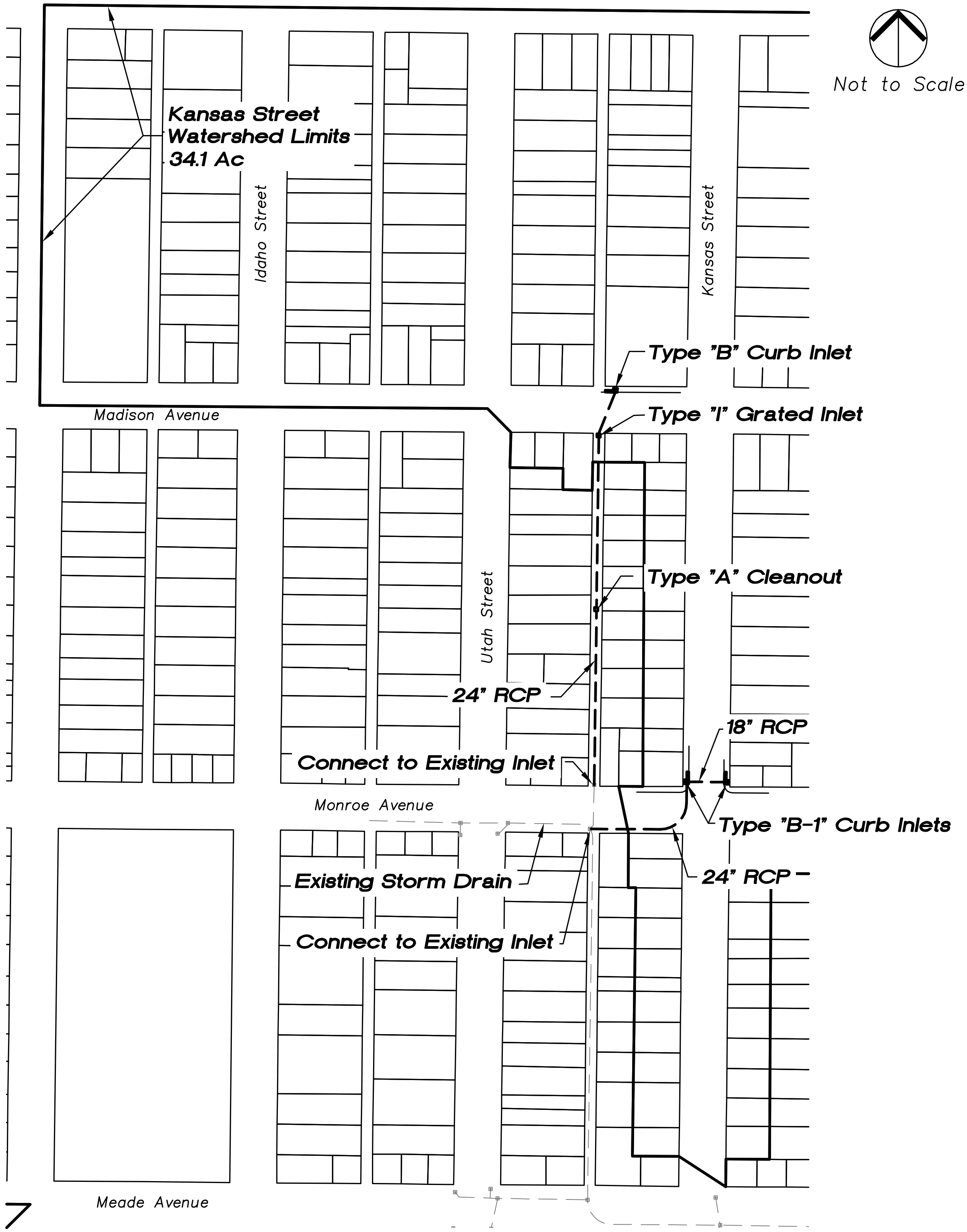

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Figure 7

Kansas Street Improvements

5.5.6 Adams Avenue at Hawley Blvd.

Existing curb heights are adequate on three of the four legs of this intersection, the exception being the north leg on Hawley Blvd., which has 3-5" curbs. However, further drainage improvements appear to be warranted here for the following reasons:

- All four segments are rated as "high" pedestrian demand
- Dry-weather ponding exists within the alley entrance on Hawley just north of Adams, which due to flat grades cannot be corrected by pavement grinding alone.
- Non-standard "corner-type" curb inlets exist on three of four corners (all but the southwest corner). Non-ADA-compliant curb ramps have been installed at each of these three corners.

Construction of new Type "B" curb inlets would permit installation of compliant curb ramps and safer crosswalks on all four legs of this heavily-used intersection. See **Figure 8, Adams Avenue Improvements**.

5.5.7 Myrtle Avenue

As shown on Fig. 2, the block of Myrtle Avenue between Grim Avenue and 31st Street receives runoff from two of large watersheds. The areas downstream of this point have been identified as having chronic drainage problems. This observation is reinforced by the runoff estimates shown in Table 5-3, which indicate that 31st Street has barely sufficient capacity for a one-year storm, and Grim Avenue has much too little capacity for even a one-year storm. A single underground culvert is proposed within the alleyway to capture and convey runoff from both of these streets to the existing downstream storm drain system, as shown on **Figure 9, Myrtle Avenue Drainage Improvement**. This improvement would provide benefits to several downstream blocks that are currently the subject of citizen complaints regarding drainage.

5.5.8 Ray St.

The northerly block of Ray Street, immediately south of University Avenue (segment NP77) has recently been extensively improved. The part of the block south of the alley entrances has mostly new streetscape and improved sidewalks. In addition, the streetscape along the adjacent portion of University Avenue has been extensively upgraded. However, the northern portion of the block remains in a substandard condition, with near-zero curb heights on the east side, and curb inlets that are not well positioned to capture the surface runoff. This area has recently become a significant venue for public events and experiences a high level of pedestrian traffic.

To close the gap in the upgraded streetscape here, and to provide for safe and proper sidewalk drainage, a small area of pavement replacement along with a new storm drain connection have been proposed. See **Figure 10, Ray Street Improvements**.

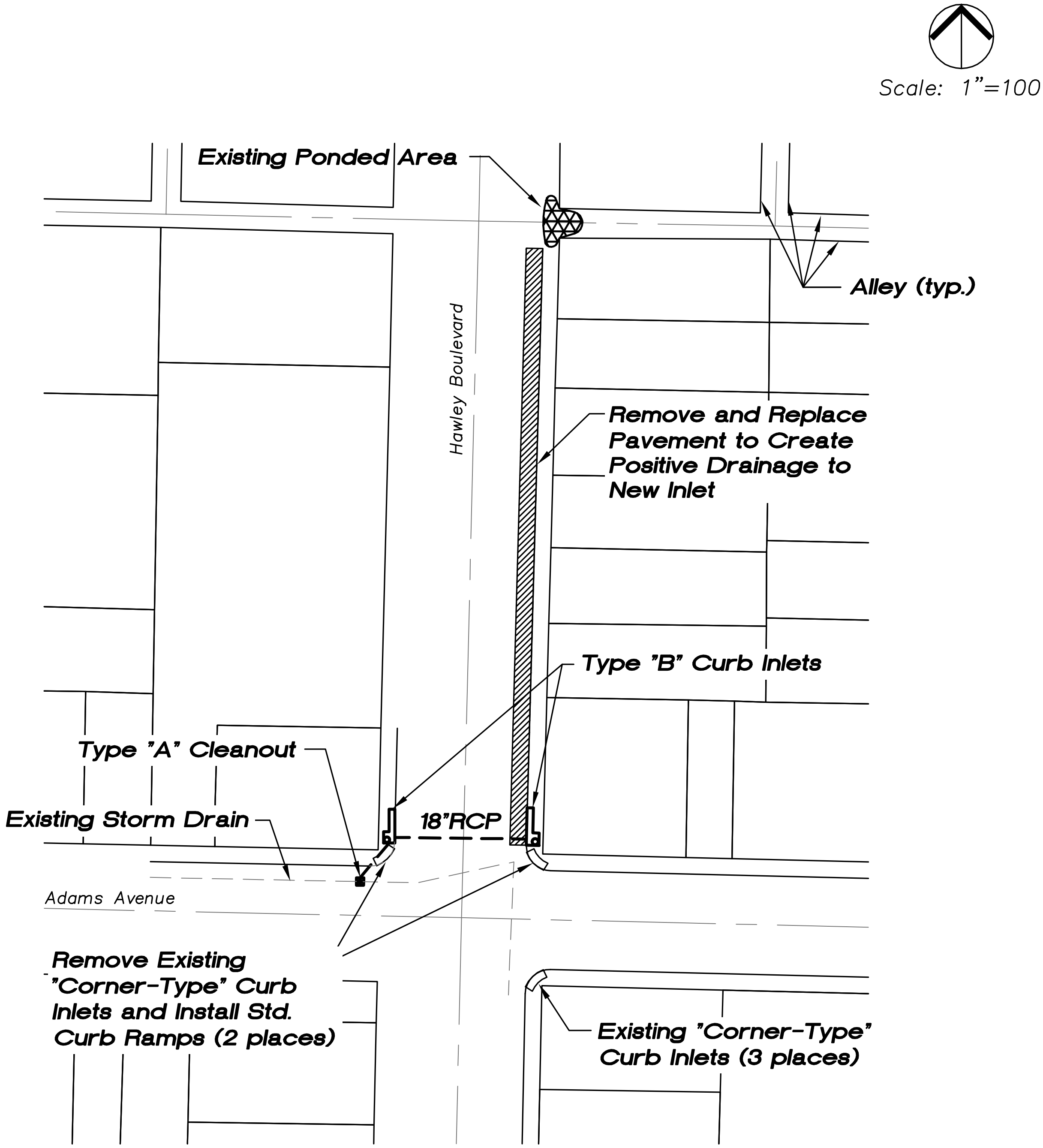

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Figure 8

Adams Avenue at Hawley Boulevard

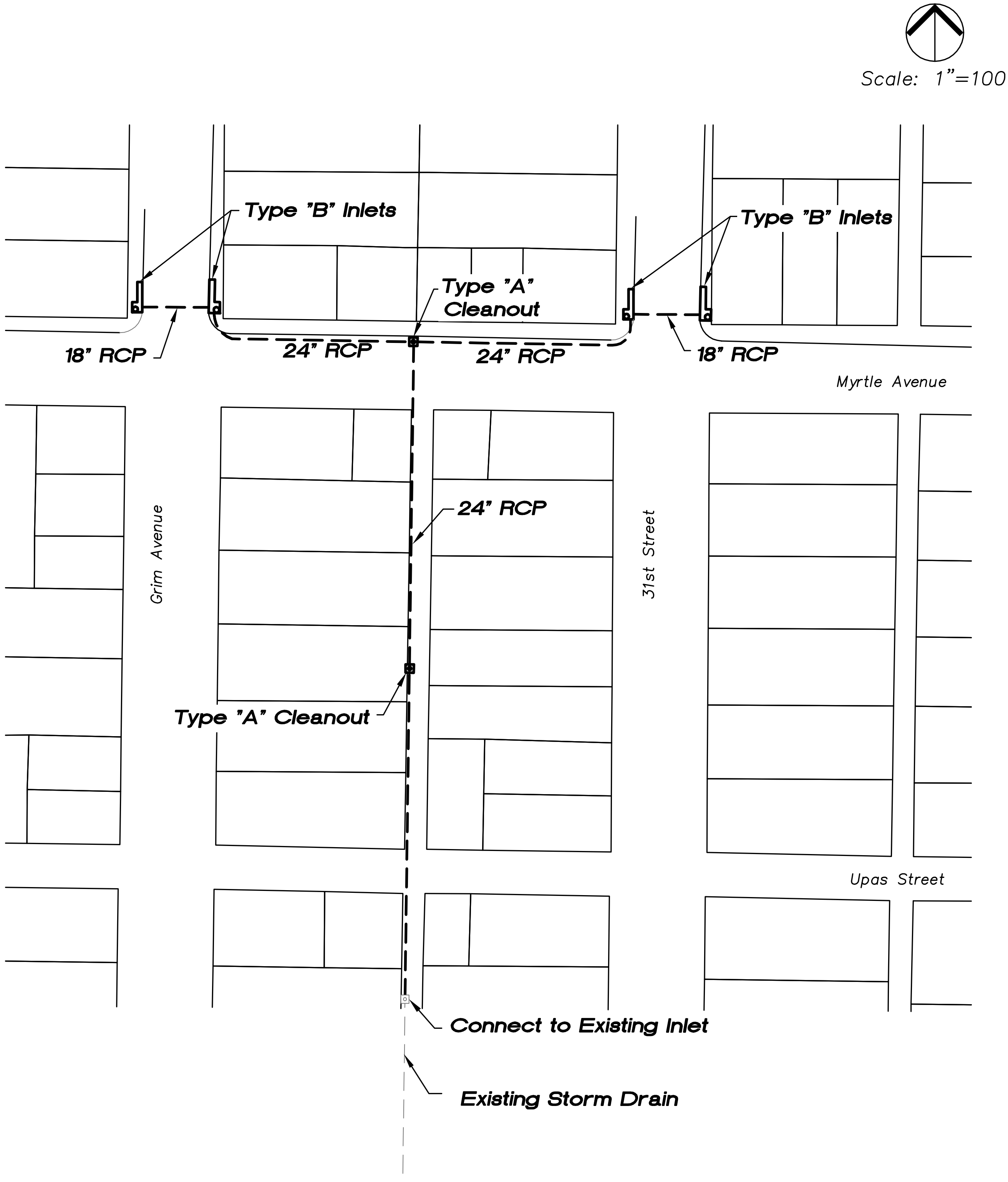

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Figure 9

Myrtle Avenue Drainage Improvement

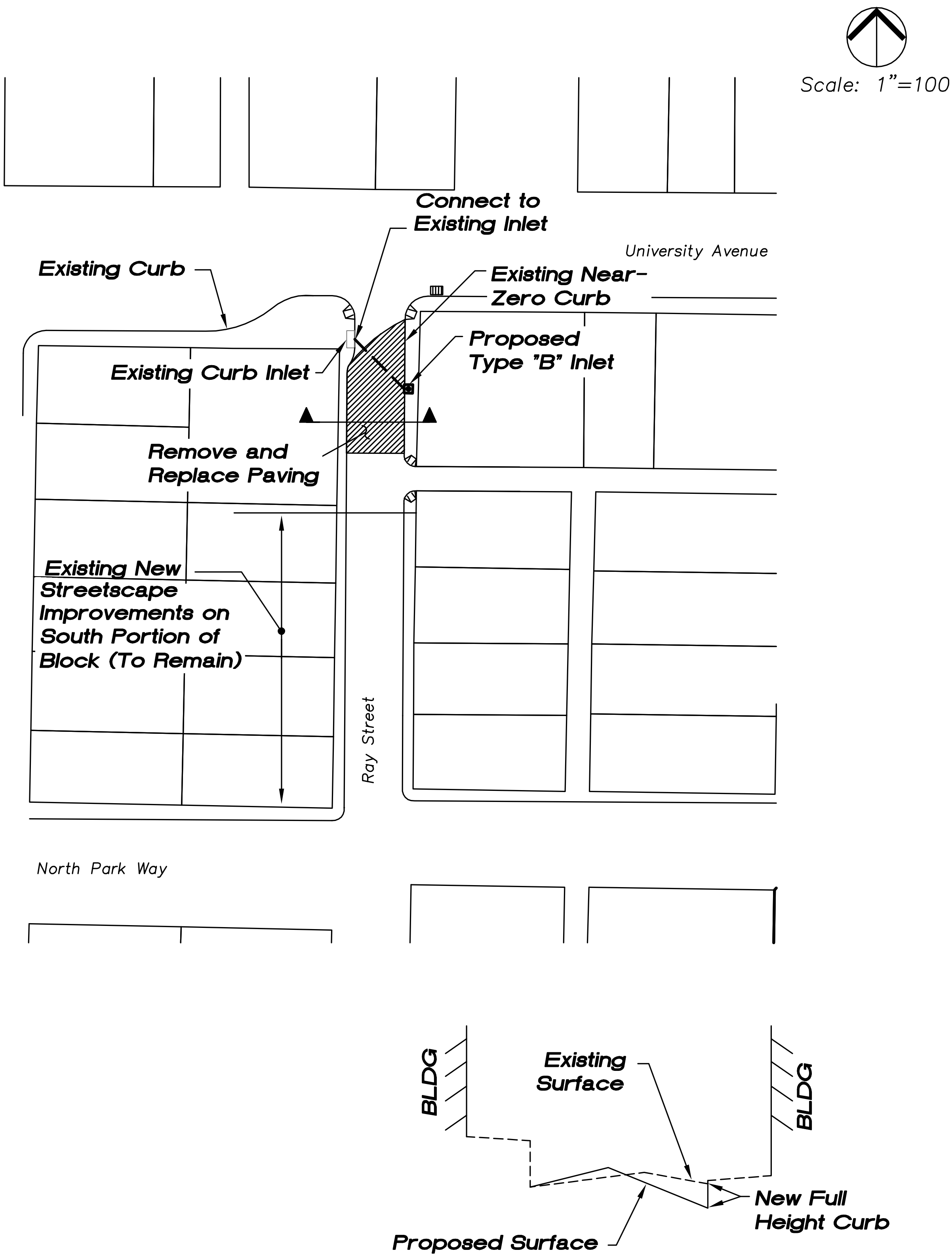

Figure 10

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Ray Street Drainage Improvements

DISTRICT 3 SIDEWALK STUDY - PHASE III

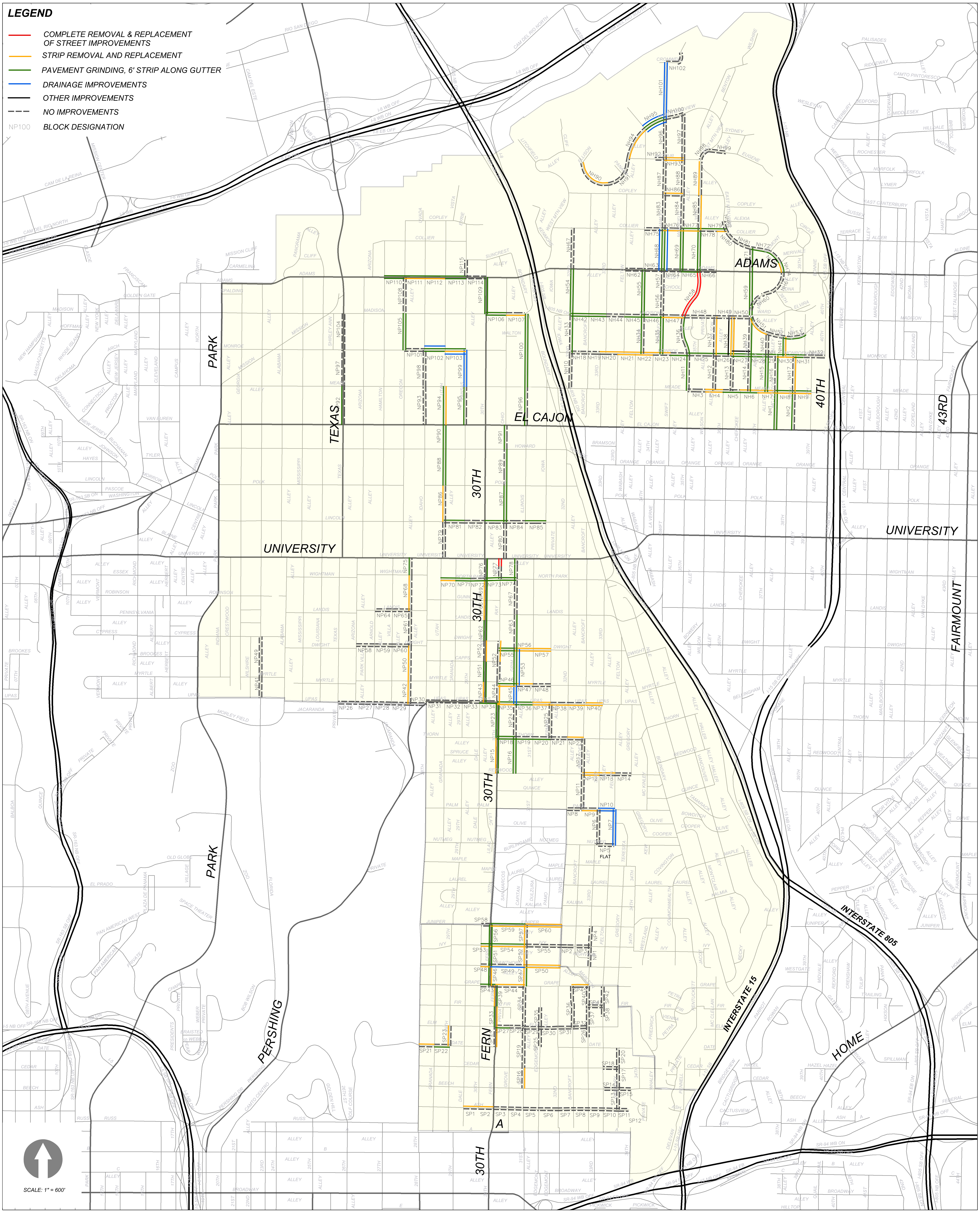

FIGURE 1

PROPOSED IMPROVEMENTS

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JOB NO. 095240029
NOVEMBER 18, 2004

DISTRICT 3 SIDEWALK STUDY - PHASE III

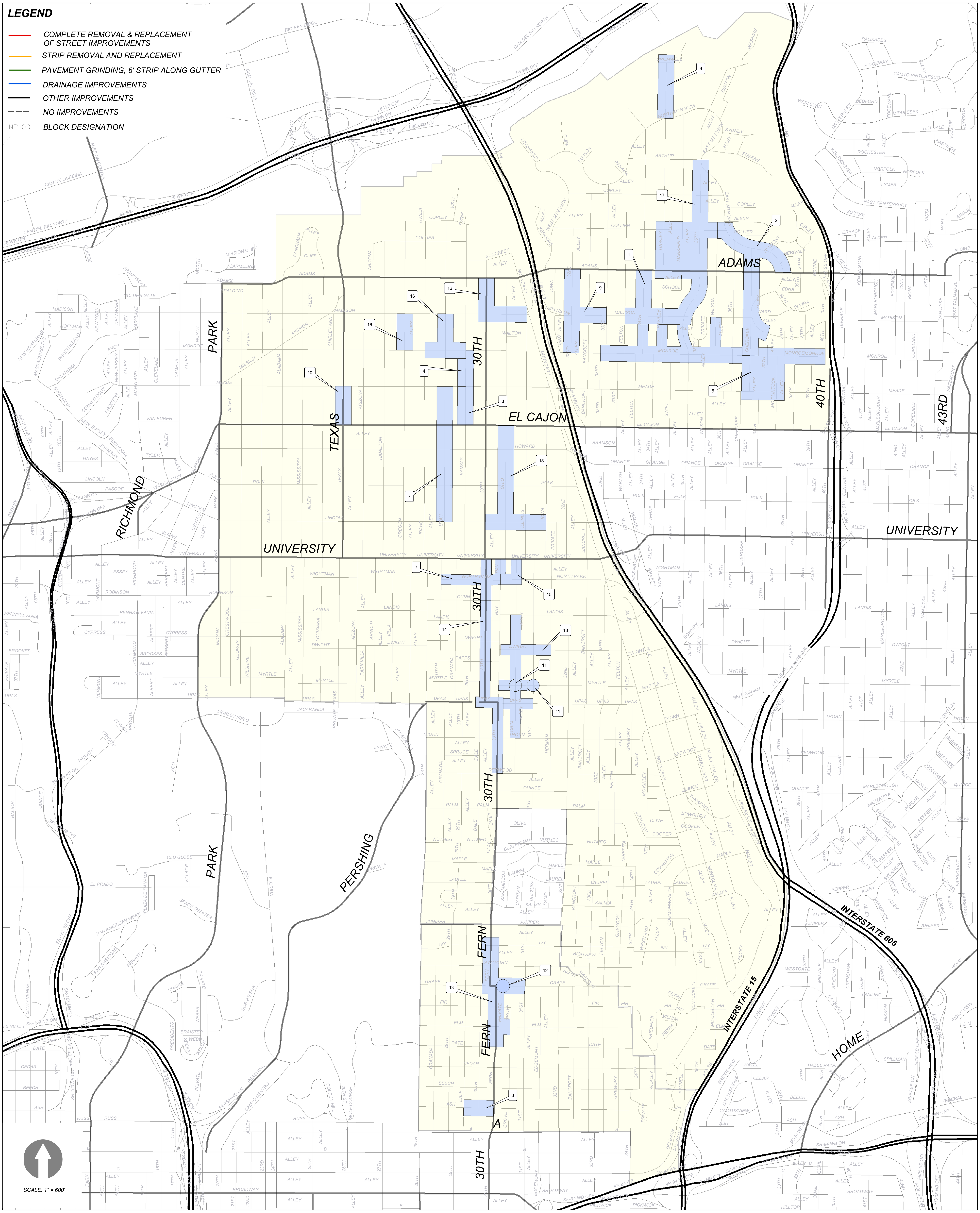

FIGURE 11

IMPROVEMENT PACKAGES

KIMLEY-HORN AND ASSOCIATES
JOB NO. 095240029
NOVEMBER 18, 2004

DISTRICT 3 SIDEWALK STUDY - PHASE III

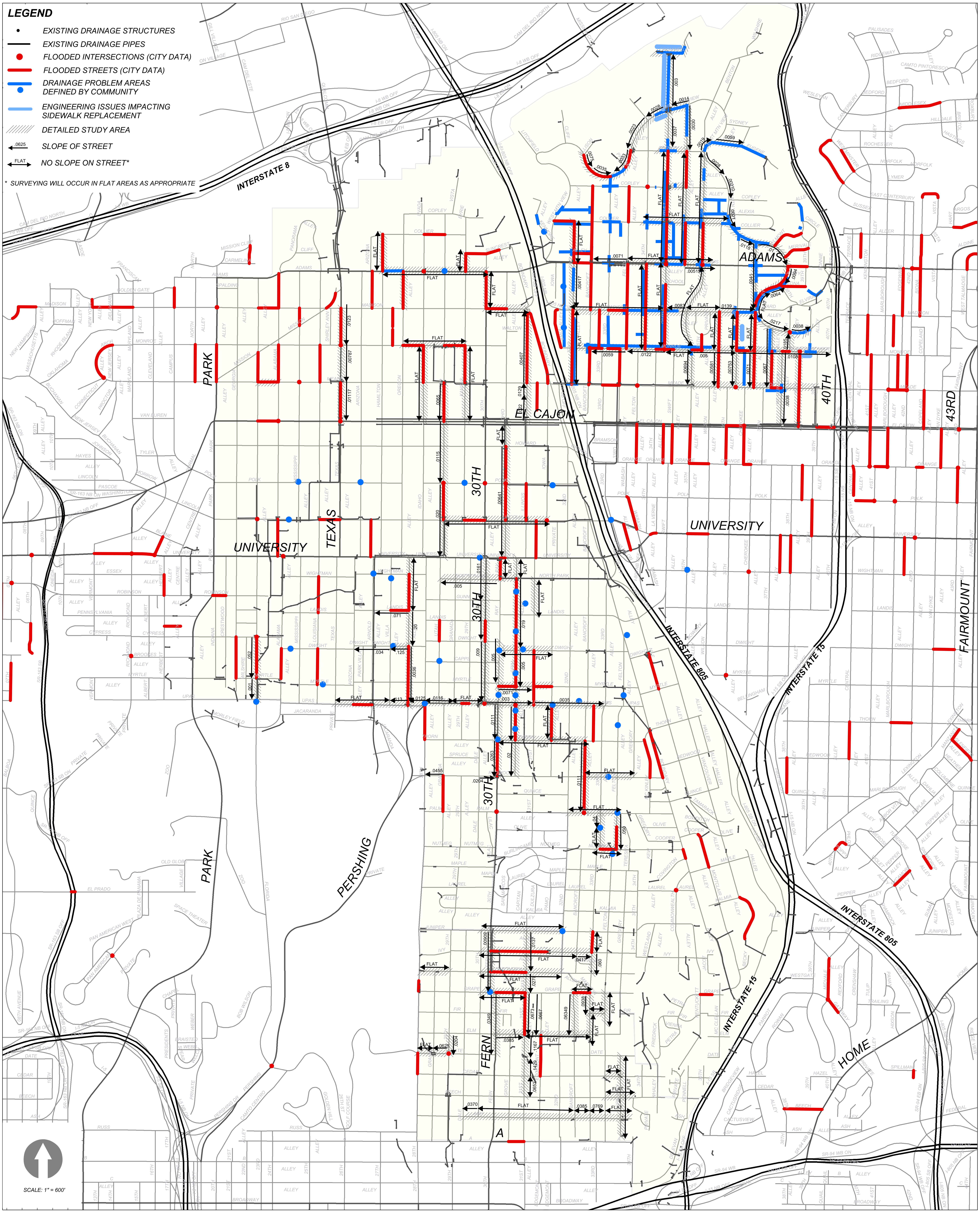

FIGURE 12

LONGITUDINAL SLOPES

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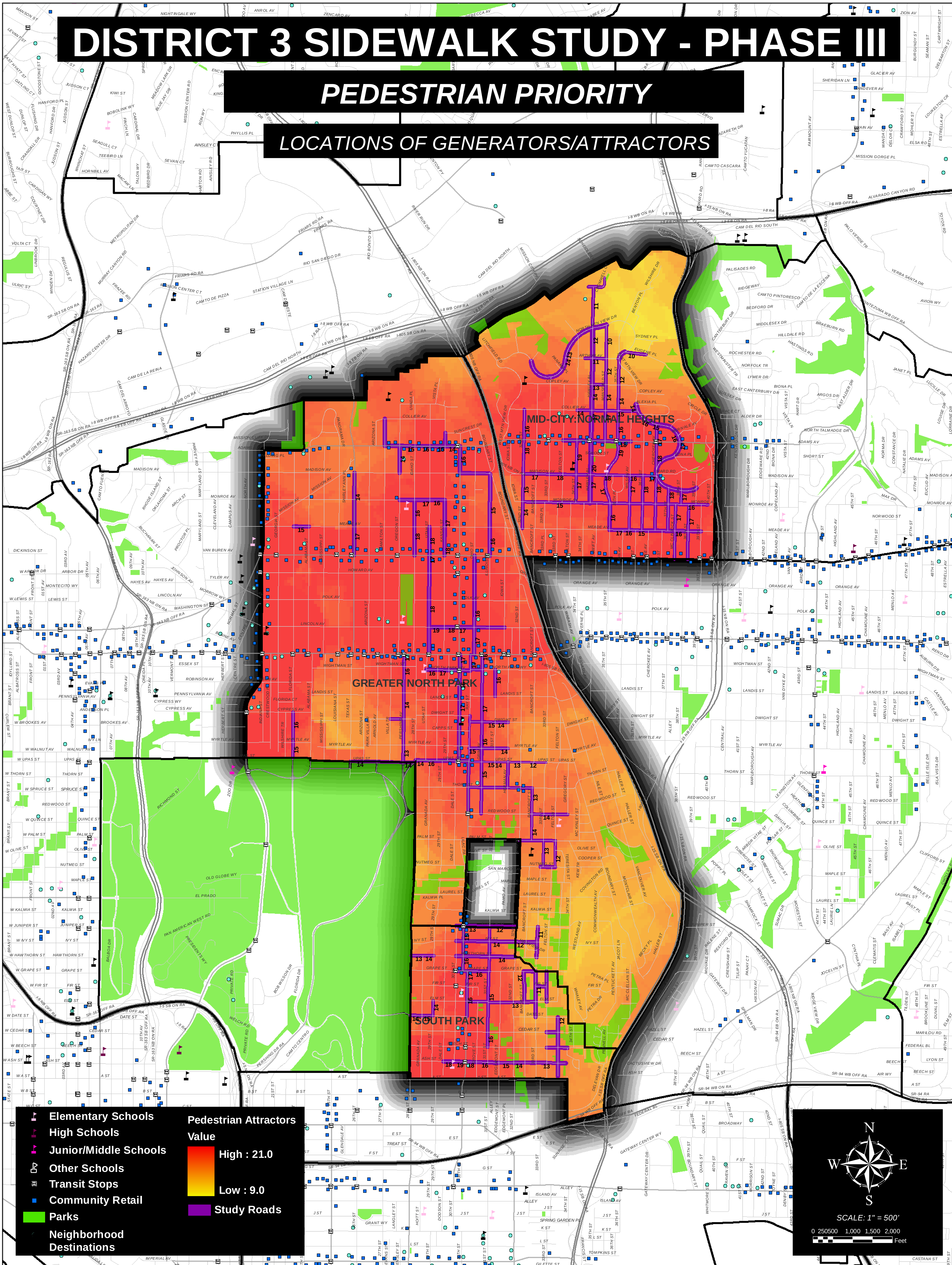
JOB NO. 095240029
NOVEMBER 18, 2004


DISTRICT 3 SIDEWALK STUDY - PHASE III
PEDESTRIAN PRIORITY
LOCATIONS OF GENERATORS/ATTRACTORS
MID-CITY:NORMAL HEIGHTS
GREATER NORTH PARK
SOUTH PARK
Elementary Schools
High Schools
Junior/Middle Schools
Other Schools
Transit Stops
Community Retail
Parks
Neighborhood Destinations
Pedestrian Attractors
Value
High : 21.0
Low : 9.0
Study Roads
N
W
E
S
SCALE: 1" = 500'
0 250500 1,000 1,500 2,000
Feet