CITY OF DAVENPORT
PAVEMENT MANAGEMENT
SYSTEM PLAN

PREPARED FOR:

CITY OF DAVENPORT, WASHINGTON

Prepared by:

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Project No. 30208.023.01

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CHAPTER 1

INTRODUCTION

CENTURY WEST
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Chapter One
Introduction

Developing the plan has been a cooperative effort between Century West and City staff. The City staff had previously conducted a pavement inventory for the entire City and the data is listed on the Transportation Improvement Board's website. Century West administered the traffic counts at locations determined by the City and we also re-evaluated the pavement condition rating for the selected roads. The pavement evaluation was completed using the TransAid Street Wise, non-computerized management guidelines. By using the previously determined PCR listed on the TIB website as well as the PCRs collected by Century West, we were able to develop pavement and gravel conditions rating and inventory maps.

The City of Davenport currently has approximately 13.1 miles of asphalt surfaced streets, and 3.3 miles of graveled roads. The asphalt roadway surfaces vary in age, type of surfacing, and condition. Many of the "paved" roadways started as gravel road and have been sealed numerous times, forming an asphaltic surface.

The City completes a Six-Year Street Plan each year in accordance with RCW 35.77.010 and 36.81.121. The Plan is adopted by City Council after an appropriate public hearing. The adopted Plan is submitted to Washington State Department of Transportation (WSDOT) TransAid for inclusion into the Statewide Transportation Improvement Program (STIP). Any projects to receive federal funding from the Federal Highway Administration (FHWA) through the TEA-21 program or state funding from the Transportation Improvement Board (TIB) through the Small City Program (SCP) must be on the City's Six-Year Street Plan. The Plan identifies street/pedestrian facilities, and other transportation projects the City intends to complete over the subsequent six year period.

The City submitted an application for and received grant funds through the Quadco RTPO to complete the Plan. The work for the plan involved collecting traffic count data, evaluating the City's gravel streets, assembly an inventory of the City's paved streets, and identifying and evaluating the City's storm drainage deficiencies.

This Plan contains all of the WSDOT elements for a simplified pavement management system for smaller agencies (less than 22,500 population). The traffic count data was collected using a MetroCount traffic counter.

With input from the City Council's Street Committee and City staff, a prioritization schedule has been developed. This schedule utilizes five separate criteria:

1. Pavement Condition.
2. Traffic Generators.
3. Average Daily Traffic (ADT).
4. Economic Impacts.
5. Availability of funding.

Criteria were selected and weighted based on:

Value of the project in protecting the City's current investments.
Total amount of present and future use of the facilities.
Maintaining the City's economic vitality.
Utilizing the City's available street funds in a manner that maximizes the benefits to its citizens.

This system should be updated on a one to two-year cycle. Pavements should be re-surveyed and rated. The prioritization criteria should be reevaluated to insure it is applicable at the time of the update. Adjustments should be made to the management system as more data on the City's streets is collected and as the City grows.

The "Pavement Surface Condition Rating Manual" and "A Guide for Local Agency Pavement Managers" were used to develop this plan. As the city continues to collect more data on the transportation system, it is recommended they develop a computerized PMS. Additional training of staff in evaluating pavements, and rehabilitation strategies should be given prior to developing a computerized system.

CHAPTER 2

EXISTING ROAD INVENTORY
&
MAINTENANCE PROGRAMS

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Chapter 2
Existing Road Inventory and Maintenance Programs

STREET SYSTEM INVENTORY

The first steps in developing the Pavement Management System Plan were the inventory of the existing streets in Davenport's transportation network, and quantifying maintenance and rehabilitation strategies that have been used in the past.

Using Right-of-Way maps and a field survey conducted by Century West Engineering, updated City street maps were assembled. These street maps show the type of roadway surface, pavement width, street classification and traffic generator information, traffic count information, and a brief history of past street improvements. Full-sized copies (24" x 36") of these maps have been provided as attachments to this plan. Reduced copies are enclosed as Exhibits 2-1 through 8-2.

PAVEMENT SECTIONS

When completing the 2001 Pavement Management System Plan thirty-four pavement cores were taken at various streets within the City to determine the typical pavement sections. The collected information will help to determine the effectiveness of rehabilitation methods and the long term reconstruction needs.

In general, the cores revealed a troubling trend in the City Streets. The vast majority of the City's streets had very little if any crushed surfacing under the asphalt pavement or bituminous treatment surface layer to provide an adequate base for the road. The City's silty loam soils make for poor subgrade materials, and it is likely that shallow crushed surfacing depths and an absence of geotextile fabric under the crushed surfacing layer has allowed the fines to permeate and contaminate the base rock layer. In the worst cases, there was almost no detectable crushed rock under the pavement section. The core logs have been included in Appendix D.

The coring data generally showed that known truck routes and traffic generator routes typically had thicker pavement sections than local access only streets. These streets typically had 2 to 3 inches or more of asphalt concrete pavement (ACP) and were more likely to still have some uncontaminated base rock. This is likely due to the increased need for maintenance on these streets that necessitated a stronger road section in the past. Residential streets that were used only for local access had very minimal pavement sections. The worst streets had only a thin 1" layer of chip seal material over almost no detectable base rock. Adding multiple layers of chip seal applications over existing gravel roads most likely formed these worst case streets.

TRAFFIC COUNTS

To develop a rehabilitation strategy, it is helpful to determine which roads are used the most, which would make them more likely to need maintenance sooner than roads that are seldom traveled. Traffic counts were conducted on traffic generator routes using a MetroCount air-hose type automated traffic counter. Traffic count data was collected at five different locations within the city on local access roads and one truck route. For each of these sites the average daily traffic counts were determined from a seven-day week where possible. The values received for each of the locations can be seen in Table 2-1. It should be noted that this method of traffic counts does not account for seasonal variations in traffic. This is most prevalent on streets that are used for harvest traffic.

Table 2-1
Daily Traffic Count

Traffic Count Location	Traffic Generator	Average Daily Traffic(ADT)	Dates of Count
Wheatland/Lincoln between 8th and City Limits	Local Access Road	216	10/7/10–10/14/10
Marshall between 7th and 8th	Truck Route	419*	10/21/10–10/28/10
10th between Morgan and Park	Local Access Road	232	10/28/10–11/4/10
Adams between 3rd and Nichols	Local Access Road	106	10/14/10–10/21/10
Loganbetween 6th and 7th	Local Access Road	60	9/30/10–10/7/10

** Likely to experience seasonal variations.*

RECENT PROJECTS

The City of Davenport completed two major road reconstruction projects in the early nineties. These projects include Adams St., from 12th Street to 7th Street (1990) funded by TIB, and Washington St. From 12th Street to 6th Street (1993) which was funded with Washington State Transportation Improvement Board (TIB) and ISTEA grant funding. These previous projects are in decent condition but some sections of the Adams Street reconstruction are starting to show their age and as can be seen on Figure 4-1 some of the blocks have low PCR ratings.

In 2000, the City reconstructed 3rd Street, from Morgan Street south approximately 1 mile to fitness Lane. This project was funded through TEA-21 and TIB. 3rd Street is a major collector along the west edge of the City. It is used by truck traffic throughout the year, but is used most heavily during harvest.

Also constructed in 2000 were sidewalks, landscaping, and lighting improvements on Morgan Street from 4th Street to 7th Street, and 6th Street from Morgan Street to Park Street. This project was funded by a combination of grants from TEA-21, TIB, City, and private funds. The city also received funding through TEA-21 and TIB for reconstruction of Monroe Street from 12th Street to 8th Street, 8th Street from Monroe Street to Fitness Lane, and Fitness Lane from 12th Street to 3rd Street. This Project was constructed in 2001.

In 2003 the City performed a 1-1/2" asphalt overlay on 5th Street from Morgan Street to Ross Street, 6th Street from Washington Street to Morgan Street, 7th Street from Madison Street to Morgan Street, 7th Street from Morgan Street to Logan Street, 8th Street from Jefferson Street to Morgan Street, 8th Street from Morgan Street to Lincoln Street, Sinclair Street from 10th to SR25, Marshall Street from 6th to 5th, Maxwell Street from 7th to 5th, and Main Street from 12th to 1st.

In 2005 the City performed a complete road reconstruction on 5th Street from Jefferson Street to Merriam Street, 1st Street from Main Street to Adams Street, Adams Street from 1st to 3rd, and 2nd Street from Adams Street to Main Street.

Figure 2-2, enclosed in the Appendices, shows a brief history of the road improvements made during the past 20 years.

CURRENT CHIP SEAL PROGRAM

As mentioned in the preceding section, the City has an agreement with the Lincoln County Road Department to perform street rehabilitation. The City's street superintendent develops the list of street sections in the most need of repair. Generally, visual inspection of City streets and records of citizen complaints generate the list. Each spring, the City contacts the County Road Department and provides them with a list of road sections, requesting rehabilitation for those streets. The County, in turn, provides the City with a cost estimate to complete the work, and the list is adjusted if necessary to match the City's annual street maintenance budget. The County road crews perform the work, and the City reimburses the County for the work.

CHAPTER 3

STORM DRAINAGE

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Chapter 3
Storm Drainage

DRAINAGE DEFICIENCIES

Century West surveyed the City's paved and graveled streets during a rainstorm event on March 10, 2011 to determine the location and significance of storm drainage deficiencies. Century West observed that many of the City's streets remain severely deficient in proper drainage facilities, and do not properly collect and dispose of the stormwater flow. Poor drainage is a major cause of premature failure of street surfacing.

The drainage problems that were observed primarily occurred either on gravel roads or where gravel and pavement roads intersected. Drainage structures for these areas were either absent, or they were in such poor condition that they can no longer function properly. Typical problems included standing water and lack of proper cross slopes on the roadway to shed stormwater and adequate drainage structures adjacent to the roadway to collect stormwater.

Compounding the drainage deficiencies is the absence of disposal options. The native soil in the City does not allow for rapid infiltration of water, which means that drywells and catch basins are not very efficient. In many areas, they are the only method available due to the flatness of the terrain and the lack of nearby drainage channels. A city-wide storm sewer system would provide the most efficient and effective method for disposing of stormwater. However, the cost of such a system is prohibitive. The locations of the major stormwater deficiencies identified during the field survey are shown in Figure 3-1 in the Appendix 4.

IMPROVEMENT ALTERNATIVES

Table 3.1 identifies stormwater improvements that could be made, as well as the associated costs, to improve the collection of stormwater throughout the city. The installation of drywells, and graded ditches could alleviate the stormwater issues found at many locations throughout the city.

The stormwater improvement projects outlined in Table 3.1 could be completed in conjunction with one or more of the six year street improvement projects (see Table 8.3) by applying the additional funds not used for street improvement projects to the stormwater improvements.

Table 3-1
Storm Drainage Improvement Projects

Year	Project Description	Estimated Cost
2011- 2016	Install drywell at 2nd Ave. and Morgan Street Install drywell at 7th Ave. and Marshall Street Install drywell at 8th Ave. and Maxwell Street Install drywell at 1st Ave. and Merriam Street Install two drywells at 1st St. and Maxwell Street Install drywell at 7th Ave. and Ross Street Install drywell at 4th Ave. and Adams Street Install drywell at 10th Ave. and Jefferson Street Install drywell between 10th & 11th Ave. on Jefferson Install drywell at 13th Ave. and Sinclair Street Install drywell at 13th Ave. and Logan Street Install drywell between 12th and 13th Ave. on Merriam Install drywell at 3rd Ave. and Maxwell Street Install drywell at 2nd Ave. and Maxwell Street	**$52,500**
	Install v-ditch along Jefferson btwn. 10th & 11th Ave. Install v-ditch along Maxwell btwn. 3rd & Nichols Install v-ditch to corner of 1st Ave. and Morgan Street	**$9,000**
	Install catch basin and 30' of 8" PVC storm pipe at 12th Ave. and Sinclair Street	**$5,000**
Total Estimated Capital Expenditures		**$66,500**

CHAPTER 4

PAVEMENT CONDITION RATING (PCR)

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Chapter 4
Pavement Condition Rating (PCR)

METHOD OF DETERMINATION

The City of Davenport's street system was evaluated using the methods developed in the StreetWise Pavement Management System Manual by the Washington State Department of Transportation. The StreetWise manual outlines a systematic method of analyzing the roads and applying an objective score to the condition of each road segment called a Pavement Condition Rating (PCR). The StreetWise evaluation method is a simplified version of the complex computerized systems used by larger agencies.

It was again evaluated in the summer of 2007. All of the PCR that were performed in 2007 are listed on the Washington State Transportation Improvement Board's website. Century West reevaluated and spot checked several roads in the City to determine if ratings listed on the TIB website were still accurate. We found their listed ratings to correspond very well to the ratings we determined during our inspection. The WSDOT Pavement Surface Rating Manual was used as a guide to identify and assess the severity of the common types of pavement distress.

The Street Wise manual uses five of the twelve indicators identified in the rating manual. These are Alligator Cracking, Longitudinal Cracking, Transverse Cracks, Raveling and Patching. The StreetWise manual focuses on these indicators for simplicity in non-computerized evaluations. Other indicators are rutting, bleeding, corrugation and waves, sags and humps, block cracking, pavement edge condition, and crack seal condition.

The extent of each type of pavement distress was measured, and the severity classified into three categories: Low, Medium and High. Alligator Cracking, and Longitudinal Cracking were measured in linear feet. Traverse cracks were counted, and Raveling and Patching were measured in square feet. The extent of each pavement distress was converted into a percentage of the total street segment area and listed on the PCR form.

Using the measured extent and severity, the tables provided in the Appendix of the StreetWise manual were used to assign a PCR value to each street segment. The four reference sheets for determining the PCR are titled as follows: Low Severity Alligator cracking, Medium Severity Alligator Cracking, High Severity Alligator Cracking, and PCR Tables for Individual Distresses. The last table is only used if alligator cracking is not present or else it is the only type of pavement distress present in the street segment.

If alligator cracking is present, the reviewer refers to the reference sheet for the severity of alligator cracking (Low, Medium, or High). Next, they cross reference it with the extent and severity of the next most predominant pavement distress. The other pavement distress may be more or less severe than the alligator cracking, or another type of pavement distress may not be present at all in this particular segment.

The following is an example of the information gathered from the visual inspection and how it is used to determine the PCR.

Example:

20% of a street segment has medium severity alligator cracking, 10% low severity alligator cracking, 5% medium severity transverse cracking, and 15% of the segment exhibited high severity raveling. To determine the PCR, the following steps would be taken:

1) Identify the most predominant severity of alligator cracking, and the most predominant severity of the other four pavement distresses. In this example, the 20% medium severity alligator cracking and the 15% high severity raveling would be used to determine the PCR. The other pavement distresses are not used.

2) Refer to the reference sheet for Medium Alligator Cracking in the StreetWise manual.

3) Locate the table for 10% to 25% Medium Severity Alligator Cracking.

4) Find the column for High Severity Raveling and cross reference it with the row for 10% to 25%.

5) The table would list a PCR rating of 20 for this street segment.

If only one type of pavement distress is present, locate the table for that type of distress. Use the appropriate column for the severity and the row for the extent of the distress to determine the PCR.

DISCUSSION OF RATING PHILOSOPHY

Each type of pavement distress evaluated is an indicator of the current pavement condition. This condition can be used to determine the street surface's remaining life expectancy. Some signs of pavement distress are more critical than others. For example, transverse cracks are typically considered a minor problem. However, severe alligator cracking can indicate rapid deterioration of the street segment if it is not repaired promptly.

WSDOT has developed a relative weight in the PCR ratings based on over thirty years of highway maintenance experience. The PCR rating tables reflect that experience.

The following is a summary of the indicators used for this evaluation:

Alligator cracking: Alligator cracking is called such because it resembles the pattern on an alligator skin. It is generally located within the wheel path of the travel lanes and is caused by traffic loads. Alligator cracking is typically a sign of the base course and/or subgrade failing and starts as longitudinal cracks. Alligator cracking can be a serious problem and lead to rapid deterioration of the street.

Longitudinal Cracking: Longitudinal cracks are the predecessors of alligator cracking. They form in the travel lanes in areas of repeated loadings and run parallel to the traffic flow. They are typically the result of failure of the base course. However, they can form along the centerline of the road or at the edge of the travel lane due to construction paving joints.

Traverse Cracking: Traverse cracks run perpendicular to the travel lanes. They can be caused by surface shrinkage due to low temperatures or asphalt hardening. Traverse cracks are typically considered a minor problem, but they can lead to more serious problems if allowed to deteriorate. The cracks allow water to penetrate the street surface. This water can cause subgrade material to migrate and contaminate the base course, or during freezing conditions can cause frost heaving and crack expansion, which can lead to pot holes.

Raveling: Raveling occurs when the aggregate rock becomes dislodged from the asphalt binder. This results in the loss of the wearing surface, and the exposed binder can cause loss of surface traction.

Patching: While patching is considered a repair to the pavement to address other distress indicators, it is still an indicator of problems with the pavement structure. WSDOT includes this indicator because if the patches were ignored in the evaluation, the problems that needed the patch in the first place would be overlooked. This might cause more pavement distress in the future. Patching might be described as the band-aid approach to problems that require stitches or surgery.

CHAPTER 5

GRAVEL ROADS

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Chapter 5
Gravel Roads

GRAVEL ROAD INVENTORY

Gravel streets compose approximately 20% of the roads within the City limits. These streets are generally located along the perimeter of the City. Century West conducted a field survey to assess the condition of the City's gravel roads. In general, the gravel roads were in fair to good condition. The primary deficiency noted was absence of proper cross slopes to shed water on the majority of the roads. This contributes to deterioration of the road surface. The gravel streets were more likely to have storm drainage deficiencies such as ponding from inadequate or non-existent drainage facilities and poorly graded road surfaces.

RATING SYSTEM

Century West developed a rating system for the gravel streets that is similar to the priority ranking system established for the paved streets. The purpose of the similar scales was to establish a continuity in the rating systems.

The gravel roads were rated on a 100-point scale that combined ratings for the condition of the road with the ratings for the estimated benefit to Davenport's citizens. The scale was broken down into categories for drainage, road condition, traffic generator status, estimated ADT, economic impacts and available funding.

Table 5-1 breaks down the ranking system that was used to classify each individual road segment. As with the rating system for the paved roads discussed in Chapter 6, the scale was weighted to put a higher emphasis on the condition of the road and less on its current use.

IMPROVEMENT PROGRAM

Streets that received recent treatment or were reconstructed only received points for prioritization. These streets are in excellent condition and do not require immediate improvements. Roads that scored a total of 30 points or less for drainage and condition are generally in good condition, but they could use minor improvements such as additional rock or grading and ditch cleaning. Roads that received a rating of 30 to 40 for drainage and condition are considered to be in fair condition and require moderate repairs such as regrading the road and adding storm drainage structures. Roads that received a rating of 40 to 50 for drainage and condition are considered to be in poor condition and require extensive repairs or reconstruction, which could include the addition of catch basins and drywells. Roads, which receive 50 to 60 points for condition and drainage, are in very poor condition and would not be considered

drivable. These roads require extensive reconstruction including grading, additional base rock, and storm drainage facilities.

Even though each block of gravel road was assigned its own individual priority number, it would not be economical to use that information to individually rehabilitate every segment. Instead, whenever possible we have grouped together road segments that are similar in priority rating and in close proximity of each other. Figure 5-1 summarizes the ratings for each street segment.

TABLE 5-1
Gravel Road Rating Scale

CRITERIA	RELATIVE WEIGHT
DRAINAGE	**30 points max.**
No drainage, severe standing water that covers large portions of the road surface	30
No drainage structures present, road slope provides some drainage, significant standing water	25
Drainage structures present but not operating properly, v-ditches present but in poor condition, standing and/or sheet flow present	20
Drywells and/or v-ditches present, minor standing water	15
Drywells and/or v-ditches, no standing water	0
ROAD CONDITION	**30 points max.**
Sunken road surface, minimal base rock, severe potholes, road is barely passable	30
Flat or sunken road, minimal base rock, major potholes.	25
Flat road surface, moderate level of base rock, significant potholes.	20
Adequate crown, adequate base rock, minor potholes.	15
Proper crown, adequate base rock.	0

TRAFFIC GENERATOR ROUTE	10 points max.
Truck Route	10
School Bus Route	10
Hospital	8
Public Bldg	8
Large Business	5
Small Business	3
Multi-Family Unit	4
Park	3
Church	3
Local Access	3
ADT	**9 points max.**
<500	9
200-499	6
1-199	3
ECONOMIC IMPACTS	**9 points max.**
Existing Business/Development Need	9
Secured New Business/Development	6
Potential New Business/Development	3
FUNDING	**12 points max.**
100-80% Non-City Funds	12
80-50% Non-City Funds	9
50-30% Non-City Funds	6
30-10% Non-City Funds	3
<10% Non-City Funds	0
TOTAL POSSIBLE POINTS	**100**

CHAPTER 6

PRIORITIZATION OF NEEDS

CENTURY WEST
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Chapter 6
Prioritization of Needs

DISCUSSION OF METHODOLOGY

Funding for street improvements through the City's annual budget is limited. Ideally, the City would have sufficient funds to repair all the streets in need on an annual basis. However, due to limited funding, only some of the improvements identified can be accomplished. To determine which streets should receive the available funding, a system is needed to prioritize the streets for maintenance and repair.

The determining factors used to establish rating or ranking criteria of City streets must consider overall street condition, usage during normal and peak times (during harvest, e.g.), type of route (arterial, bus route, etc.), and impacts to the local economy by giving a level consideration to routes used to and from local businesses.

RANKING CRITERIA

Each street segment was evaluated based on a Pavement Condition Rating (PCR) rating, traffic generator status, traffic counts, funding, and business development transportation needs. Each criterion was assigned a relative weight based upon its importance within the community in providing for transportation needs and the confidence in the validity of the ranking assigned.

Pavement Condition Ratings (PCRs) were assigned a relative weight on a sliding scale. Streets in good to excellent condition were not assigned any points since these roads need little or no work. Beginning with streets in fair condition, the worse the condition of the street, the more points it was assigned. This is based upon the fact that the more a road is allowed to deteriorate, the more it costs to rehabilitate or reconstruct. If some preventative maintenance is expended now, a larger expenditure may be prevented later. This is in essence protecting the City's current investment in street surfacing.

The second major ranking criterion is traffic generator type associated with each street segment. Major routes such as arterials, truck routes, and school bus routes were assigned relative weights. Streets serving buildings such as the hospital, courthouse, and businesses were also assigned a point value. These streets have higher traffic volumes and serve a greater need than local access streets.

The third ranking criterion is Average Daily Traffic (ADT) counts. The ADT was given fewer points (upto 9) partly because it is closely related to the traffic generators on the street. A higher score would give an unfair advantage to arterials. The point scale assigned is based upon the frequency that the street is used, with the more frequently used streets benefiting more of Davenport's citizens.

The fourth criterion is economic impacts. Points were assigned if the road serves a business or development. More points were assigned for existing businesses and developments than for potential business and development. To maintain and improve the economic health of the community, it is important to keep existing businesses and promote new business. It is important to note that this does not provide for new street extensions to businesses or developments, but rather improves existing streets that would be utilized by those developments. New street extensions are the responsibility of the individual developers.

The final ranking criterion is the ability to leverage funding for the project. The City's annual street maintenance funds are not sufficient to cover the cost of major reconstruction and rehabilitation projects. While the City has been very proactive in maintaining its roads compared to most small towns and cities, their ability to raise funds from their own tax base is limited. Outside funding sources are necessary for making major street improvement projects a reality. Based on this need, points are assigned to each block based upon the ability to obtain Non-City funding for the projects.

TABLE 6-1
Street Segment Prioritization

CRITERIA	RELATIVE WEIGHT
PCR	**60 points max.**
0-24	60
25-49	55
50-74	50
75-100	0
TRAFFIC GENERATOR ROUTE	**10 points max.**
Truck Route	10
School Bus Route	10
Hospital	8
Public Bldg.	8
Large Business	5
Small Business	3
Multi-Family Unit	4
Park	3
Church	3
Local Access	3
ADT	**9 points max.**
<500	9
200-499	6
1-199	3
ECONOMIC IMPACTS	**9 points max.**
Existing Business/Development Need	9
Secured New Business/Development	6
Potential New Business/Development	3
FUNDING	**12 points max.**
100-80% Non-City Funds	12
80-50% Non-City Funds	9
50-30% Non-City Funds	6
30-10% Non-City Funds	3
<10% Non-City Funds	0
TOTAL POSSIBLE POINTS	**100**

CHAPTER 7

PAVEMENT REHABILITATION STRATEGIES

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

Chapter 7
Pavement Rehabilitation Strategies

AVAILABLE STRATEGIES

There are several maintenance and rehabilitation methods discussed below that can be used to addresses specific types of pavement distress indicators.

Crack Seal: Crack sealing involves applying a narrow strip of liquid crack sealant along traverse and longitudinal cracks in the pavement. Crack sealing can deter further pavement degradation by preventing water from penetrating the pavement. Crack sealing is not a feasible maintenance method if the pavement is experiencing severe cracking.

Bituminous Surface Treatments (BST):

Chip Seals

The Chip Seal is the most common form of rehabilitation used by the City at this time. A Chip Seal seals the surface to prevent water penetration and gives the street segment a new wearing course. It does not substantially increase the structural strength of the pavement section. Therefore, it does not work well where the street is experiencing subgrade or base failures. A Chip Seal works best for streets that have low to moderate cracking or raveling. Existing cracks usually "reflect" through the new chip seal in two to three years, requiring additional maintenance. This can be somewhat reduced by sealing cracks or using a paving fabric prior to applying the chip seal.

Slurry Seal

Another type of BST is the slurry seal. The slurry seal is the application of a mixture of very small aggregate and liquid asphalt. It also works very well in sealing the asphalt to prevent water penetration into cracks in the pavement. Slurry Seals are usually 0.25 to 0.50 inches deep. Therefore, they do not substantially improve the structural strength of the pavement. As with chip seals, they do not work well on pavements that are experiencing subgrade or base failure.There are not many local contractors with the equipment necessary to do slurry seals, which makes the cost of this method relatively high. Existing cracks will often reflect through the new seal if not properly treated.

Fog Seal (Construction Seal)

Another type of BST is the fog seal. The fog seal is the application of a dilute asphalt emulsion without an aggregate cover. The fog seal is used to help seal a chip seal or pavement surface. The fog seal can be used to seal a surface to prevent raveling under traffic and water penetration. They do not substantially improve the structural strength of the pavement nor do they provide a new wearing surface. The fog seal is typically used in conjunction with a chip seal or ACP overlay and is seldom used as a standalone rehabilitation method.

Overlay: A pavement overlay involves applying a layer of asphalt concrete pavement over the existing pavement surface. It does not solve most of the serious problems with the base course or subgrade, but it does strengthen the structure of the pavement section. An overlay is typically 1-2 inches deep with greater depths providing more protection to the existing pavement and more structural strength.

A common problem with a pavement overlay is that if cracks in the original pavement section are not properly treated, they can reflect through to create cracks in the new surface. Another common problem is multiple overlays. If several overlays are applied to a street segment, the road surface is raised which reduces the curb exposure. To avoid this, agencies can grind down the asphalt and/or feather the edges of the overlay, but this is expensive and the ground asphalt must also be removed and hauled to a disposal site. Overlays do not solve drainage problems and can actually create new drainage problems. Reduced curb exposure reduces the carrying capacity of the gutter and can cause stormwater to flow onto the sidewalk and into building entrances.

Reconstruction: Reconstruction is the replacement of the existing roadbed and asphalt. This method should only be used for the worst streets based upon the PCR values. This method is commonly used when major improvements such as street widening are done. Reconstruction is also used when the road base needs replaced to address base, subgrade or severe pavement failure and where rehabilitation methods are no longer effective. Reconstruction may also be done to address increased traffic loads. While it is the most expensive method, it is the only method of addressing below surface roadway deficiencies. It returns the roadway to a "new" condition and substantially reduces short term maintenance requirements.

DETERMINATION OF IMPROVEMENT TYPES

Using the PCR ratings developed in Chapter 4, an appropriate rehabilitation method is selected for the streets in need of repair. To determine which rehabilitation method is appropriate, the PCR ratings were divided into four groups.

Group 1 represents the road segments with a PCR between 75 and 100. These roads are in good to excellent condition and have likely been rehabilitated or reconstructed in the last 10 to 15 years. They do not require major rehabilitation at this time. Any cracks that are observed in these streets should be sealed during the City's annual crack sealing program.

Group 2 represents the road segments with a PCR between 50 and 74. These roads are in fair condition, but require minor rehabilitation and maintenance work.

Group 3 represents the road segments with a PCR between 25 and 49. These roads are in poor condition, but rehabilitation is still viable and should be done within one to two years to prevent further damage to the road.

Group 4 represents the road segments with a PCR below 25. These road segments are in very poor condition and require extensive rehabilitation or reconstruction.

These groups are based on rehabilitation methods determined by StreetWise, and may not necessarily correlate with those used by the State for project funding through the Pavement Maintenance Program.

Timing of street rehabilitation or reconstruction is determined by the street prioritization as described in Chapter 6 and the availability of funding.

COSTS

One of the main uses for the Pavement Management System Plan is for the most efficient use of the available improvement funds. Rehabilitation methods increase in cost from the least expensive, crack sealing, to the most expensive, reconstruction.

The following is a summary of the estimated costs for each type of pavement rehabilitation.

Table 7-1
Estimated Costs for Pavement Rehabilitation

Rehabilitation/Maintenance Method	Estimated Cost
Crack Sealing	$ 4.18 /L.F.
Chip Seal	$ 3.25 /S.Y.
Overlay	$ 25.00/S.Y. per inch of ACP (Mobilization, Patching, Crack Seal, HMA Pre-level, HMA Overlay)
Reconstruction - Local Access	$40.99 /S.Y. (Mobilization, Roadway Excavation Including Haul, 2" HMA, 6" Base Course)
Reconstruction - Arterial/Collector	$81.98 /S.Y. (Mobilization, Roadway Excavation Including Haul, 4" ACP, 12" Base Course)

* *Actual costs will vary based upon the condition of each street segment, current and projected traffic loads, need for stormwater facilities, and soil conditions.*

** *Additional improvements such as curbs, sidewalks and stormwater facilities and Engineering/Administration costs have not been included in these estimates.*

Detailed cost estimates have been included in Appendices of this plan for projects identified for the 6-year Street Improvement Plan. General cost estimates have been provided for long term planning for the 20-year planning horizon.

For each street segment in the long-term planning period for the 20-year horizon, the predominant rehabilitation method to be used has been listed. However, more than one method may be used on a particular street segment. For example, a small section may require patching to repair a section of severe alligator cracking in preparation for the entire street segment to have chip seal or overlay applied. This reduces the rehabilitation costs where possible and helps maximize the useful life of the rehabilitated street segment.

CHAPTER 8

IMPROVEMENT PROGRAM

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

Chapter 8
Improvement Program

PRIORITIZATION OF PROJECTS

As discussed in Chapter 6, each street segment was prioritized based on the criteria of 1) PCR, 2) Traffic generators, 3) average daily traffic (ADT), 4) economic impacts, and 5) availability of funding. Each criteria was scored based on a relative weight, with a total possible score of 100.

Table 6-1 summarizes the ranking system used to prioritize each individual street segment. Figure 6-1 summarizes the prioritization point total assigned to each street segment.

DEVELOPMENT OF PROJECTS

Each individual block of City streets has been evaluated and assigned a priority number. It would, however, be uneconomical to treat each block of street as an individual rehabilitation/reconstruction project. To provide a more cost effective improvement program, the projects have been developed as adjacent blocks having similar priority ratings, type of rehabilitation method needed, and the availability of funds. The improvement program is intended to provide the City a realistic and useful program for street maintenance, and serve as a guide for developing 6-Year Street Improvement Plans.

In general, street segments with a PCR of 0-25 are scheduled for a reconstruction, PCRs of 25-49 are scheduled for a pavement overlay, and PCRs in the 50-74 range are scheduled for a Chip Seal. The exceptions are where it is more economical to group segments together. In some projects, some of the segments scheduled for a pavement overlay may have a PCR between 50 and 74.

The WSDOT Streetwise manual recommends updating the PCR ratings for each street segment on an annual or biannual basis. Road conditions will continue to deteriorate over the course of the 6-year plan, and streets that only required a chip seal or crack sealing at the start of the six-year cycle may need more extensive repairs by the time funding is available for a particular project. Therefore, the City should review streets prior to each year's improvements for applicable improvement type.

As a history of PCR values is developed for each street segment, changes in the street condition and the PCR value should be closely monitored. These changes may lead to clues of what is going on with the street. Drastic changes in the PCR value may mean subgrade problems or increased traffic.

PROJECT PHASING

Some projects developed in this plan may need to be completed in phases due to the timing of available funds. Phasing is more common on street reconstruction projects where improvements are more costly. As the City develops their annual budgets, modifications to the improvement program to include phasing may be necessary.

6-YEAR STREET PLAN

The City's 6-Year Street Plan is updated on an annual basis. This pavement management system plan should be reviewed and used in the development of the 6-year street plan. Additional growth or new funding opportunities may arise which were not anticipated in compiling this plan. These should be incorporated into the 6-Year Street Plan updates and updates of this system plan. It is very important to include in the 6-Year Street Plan any projects where State or Federal funding will be applied for or is anticipated.

The City anticipates an average annual funding level of approximately $73,000 per year for capital improvements to the street system. Based upon the prioritization point totals listed in Figure 6-1 and the available funding, Figure 8-1 and Table 8-1 highlight the proposed projects for the 6-year street plan.

Table 8-1
Projected 6-Year Street Plan Improvements

Year	Project Description	Estimated Cost
2011	1) 3rd St. Reconstruction (Morgan St. to Lincoln St.) ***TIB Grant***	$867,000
2012	1) Maxwell St. Overlay (7th St. to 12th St.) ***TIB Grant***	$388,000
2013	1) Marshall St. Overlay (7th St. to 12th St.) ***TIB Grant*** 2) Marshall St. Reconstruction (1st St. to city limits)	$383,100 $106,500
2014	1) Logan St. Reconstruction (6th St. to 8th St.) ***TIB Grant*** 2) McGinnis Road Reconstruction (City Portion)	$660,900 $56,595
2015	1) Morgan St. Reconstruction (2nd St. to city limits) ***TIB Grant*** 2) Merriam St. Reconstruction (1st St. to city limits)	$423,000 $106,500
2016	1) 1st Ave. Reconstruction (SR2 to Park St.) ***TIB Grant*** 2) 1st Ave. Reconstruction (Park St. to Marshall St.) 3) 10th Ave. Overlay (Morgan St. to Maxwell St.) 4) 10th Ave. Overlay (Maxwell St. to Jefferson St.) 5) Adams St. Grind & Replace (7th Ave. to 12th Ave.) 6) Wheatland Road Reconstruction 7) Ross St. Overlay (6th Ave. to 11th Ave.) 8) Adams St. Overlay (3rd Ave. to 5th Ave.) 9) Merriam St. Overlay (5th Ave. to Nichols) 10) Gravel Road Improvements (See Table 8-2)	$169,000 $211,800 $290,500 $283,800 $482,300 $399,000 $384,500 $219,000 $153,900 $25,900
Total Estimated Capital Expenditures		$5,553,800

20-YEAR GRAVEL ROAD PAVING PLAN

The amount of funding that is available for repair or reconstruction of gravel roads is extremely limited. In the past, the City has budgeted 5% of the available street rehabilitation funds to pave existing gravel roads. With the increasing costs for construction materials it is recommended that in the future, the city budget 7.5% of the available street rehabilitation funds to pave existing gravel roads. The low amount available requires the City to budget the projects over several years. The proposed construction projects along with their estimated costs are presented in Table 8-2. Based upon this level of funding, a 23-year plan was developed for paving the gravel roads. The gravel roads should be paved in the order of their ranking. For gravel road ranking see Appendix E and Figure 5-1.

Table 8-2
Projected 20-Year Gravel Road Improvement Plan

Year	Project Description	Estimated Cost*
2011- 2016	1) 9th St. between Sinclair and Logan Reconstruct with Pavement and Storm Drainage Facilities	$25,900
2017 - 2022	1) Logan Street from 14th St. to 13th St. Reconstruct with Pavement and Storm Drainage Facilities	$26,100
2023 - 2028	1) Logan Street between 13th St. and 12th St. Reconstruct with Pavement and Storm Drainage Facilities	$26,100
2029- 2034	1) Park St. from 13th St. to 12th St. Reconstruct with Pavement and Storm Drainage Facilities	$26,100
Total Estimated Capital Expenditures		**$104,200**

* *Detailed cost estimates are provided in Appendix A.*

Care should be taken when putting a new surface on existing gravel roads. If an adequate base is not installed on a properly prepared subgrade prior to paving, the resurfacing may result in more maintenance costs in the future.

FUNDING PROGRAM

Table 8-3
Projected Capital Expenditure Funding

Year	Anticipated Capital Improvement Funds	Gravel Road Improvements 7.5%	Pavement Rehabilitation & Storm Drainage Improvements 92.5%	*Estimated Annual Construction Expenditures	Annual Fund Balance
2011	$73,000	$5,475	$67,525	$43,350	$24,175
2012	$73,000	$5,475	$67,525	$19,400	$48,125
2013	$73,000	$5,475	$67,525	$125,655	$14,170
2014	$73,000	$5,475	$67,525	$89,640	-$7,945
2015	$73,000	$5,475	$67,525	$127,650	-$60,125
2016	$73,000	$5,475	$67,525	$2,619,700	-$2,552,175

* *5% matching funds for TIB projects plus entire project costs for non-TIB projects.*

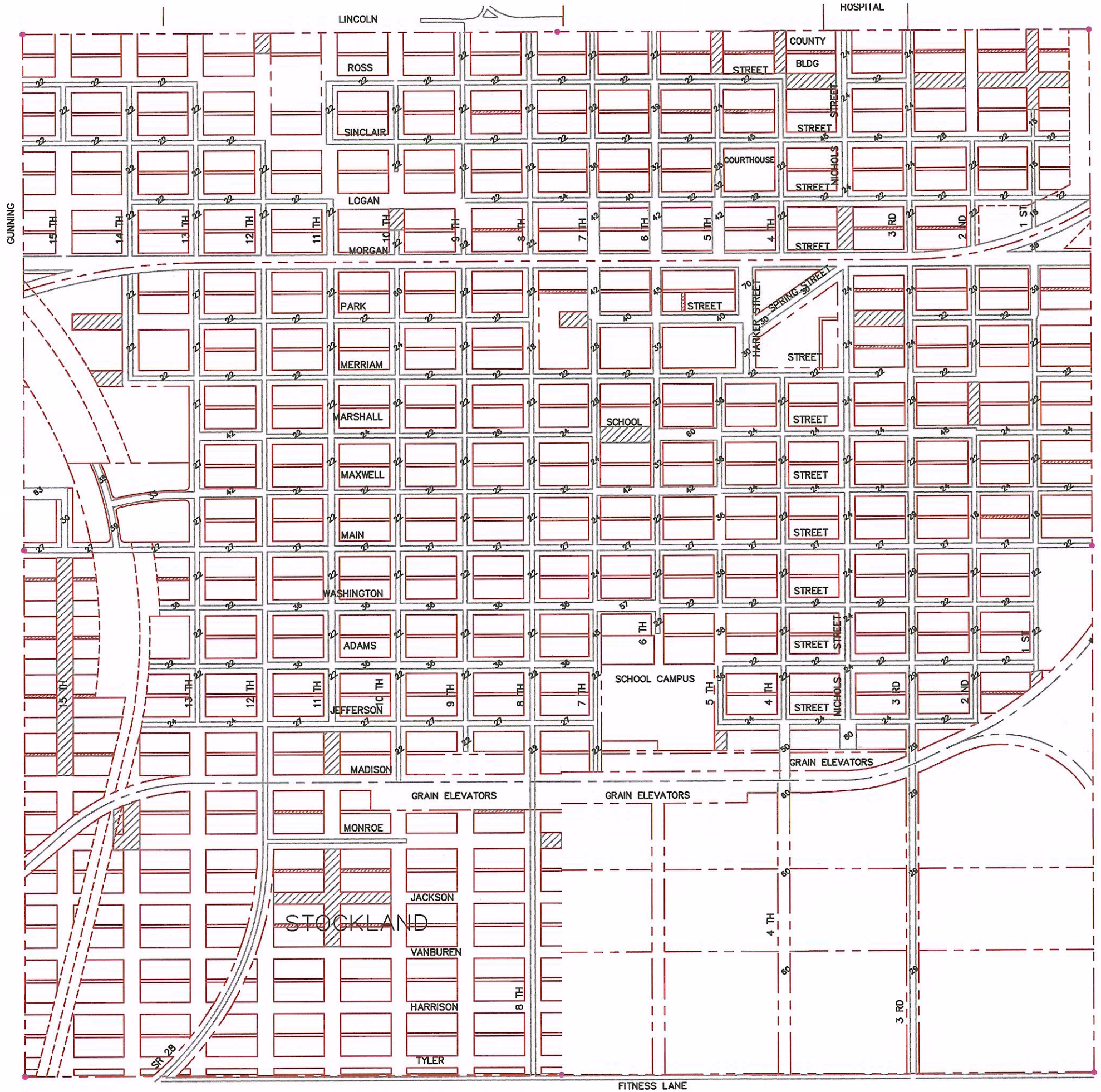
Table 8-4
Projected Capital Expenditure Funding

Year	Gravel Road Improvement Expenditures	Estimated Construction Funds	Annual Fund Balance
2011-2016	$25,900	$27,375	$1,475
2017-2022	$26,100	$27,375	$1,275
2023-2028	$26,100	$27,375	$1,275
2029-2034	$26,100	$27,375	$1,275

FIGURES

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS



CITY OF DAVENPORT

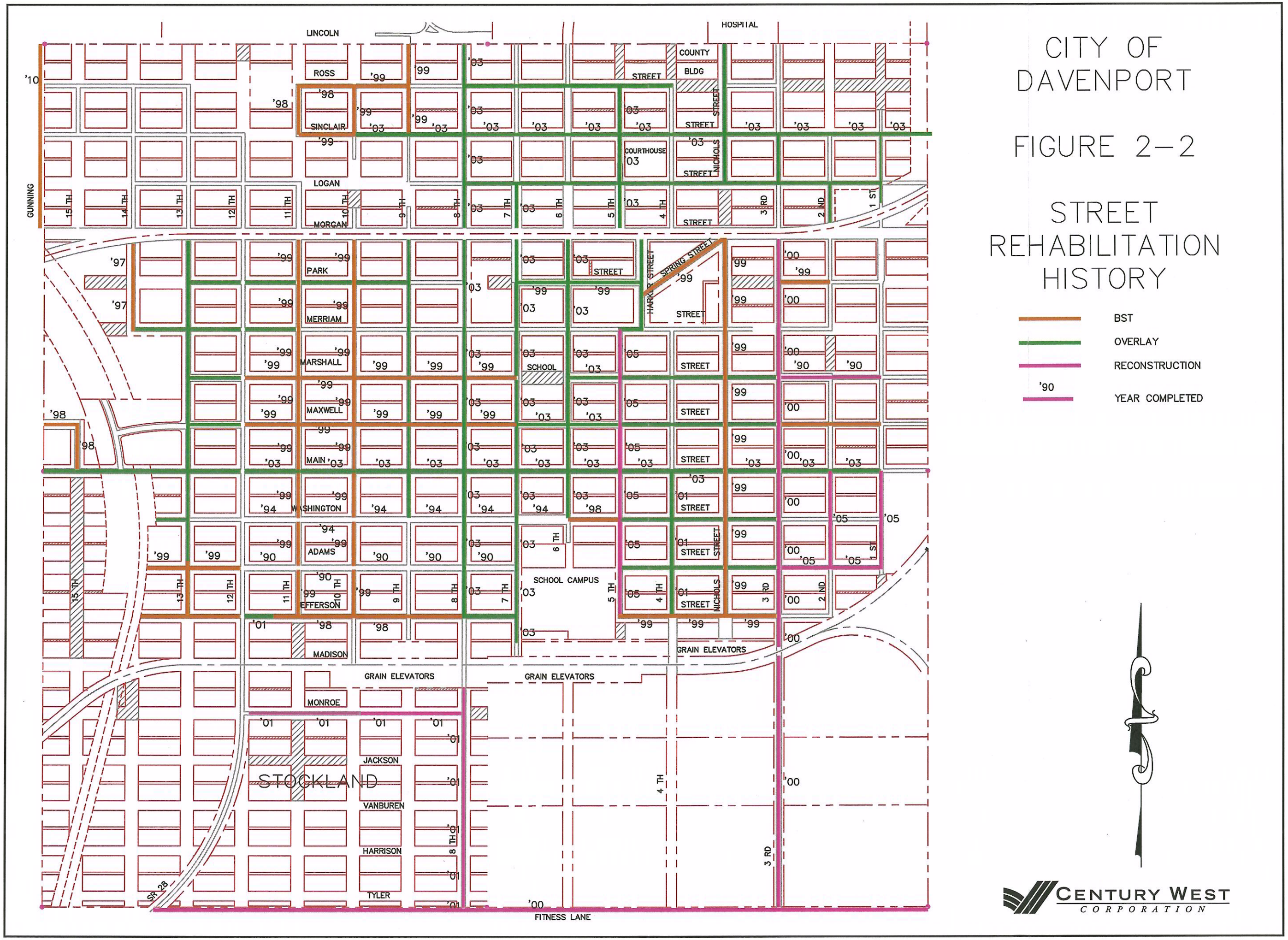
FIGURE 2–1

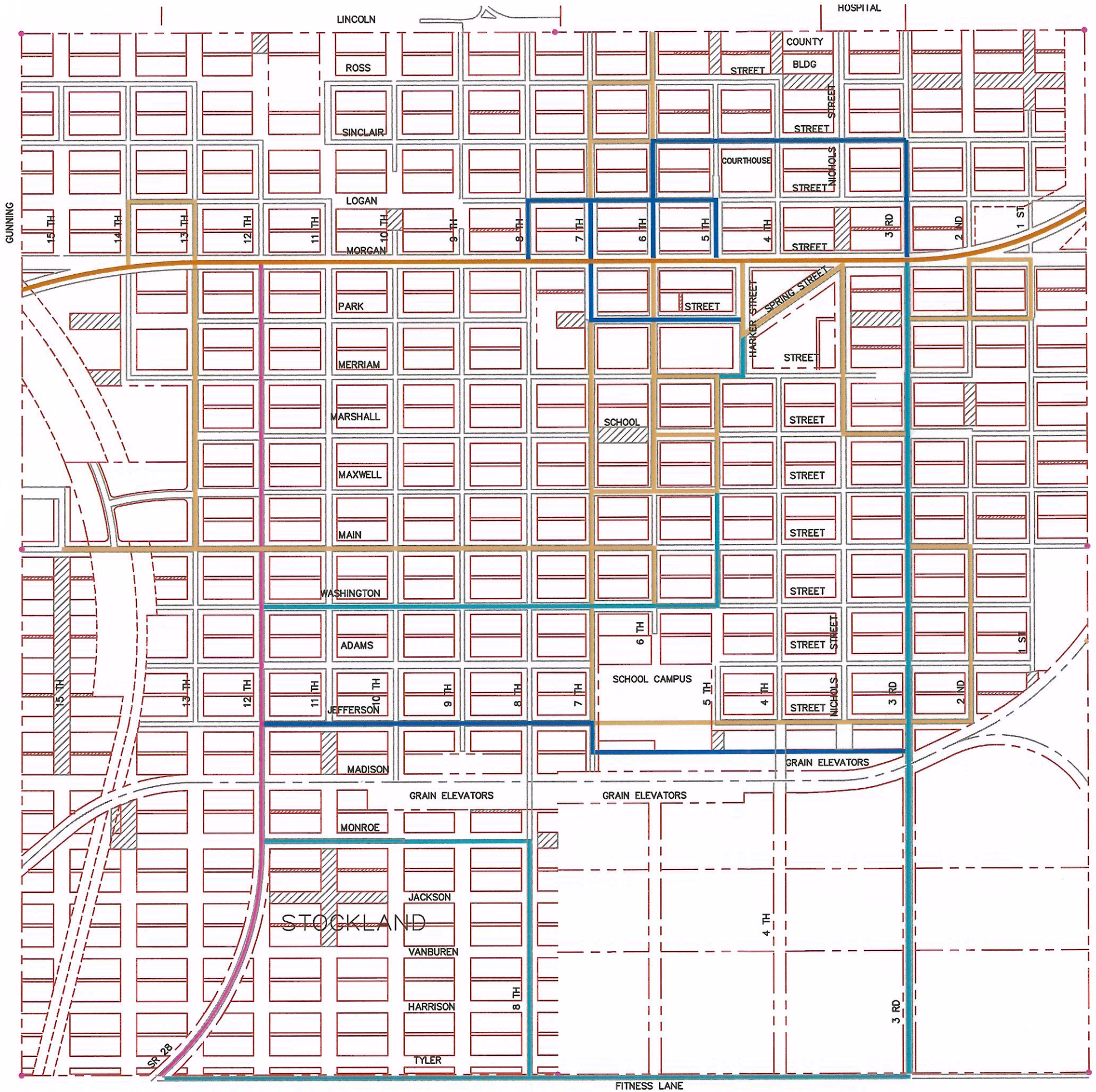
STREET INVENTORY

24 STREET PAVEMENT WIDTH

VACATED RIGHT–OF–WAY

CENTURY WEST CORPORATION


CITY OF DAVENPORT
FIGURE 2-2
STREET REHABILITATION HISTORY
BST
OVERLAY
RECONSTRUCTION
'90
YEAR COMPLETED
LINCOLN
HOSPITAL
COUNTY BLDG
ROSS
SINCLAIR
LOGAN
MORGAN
PARK
MERRIAM
MARSHALL
MAXWELL
MAIN
WASHINGTON
ADAMS
JEFFERSON
MADISON
MONROE
JACKSON
VANBUREN
HARRISON
TYLER
STOCKLAND
SCHOOL
COURTHOUSE
SCHOOL CAMPUS
GRAIN ELEVATORS
SPRING STREET
HARRISON STREET
NICHOLS STREET
GUNNING
FITNESS LANE
SR 28
CENTURY WEST CORPORATION



CITY OF DAVENPORT

FIGURE 2–3

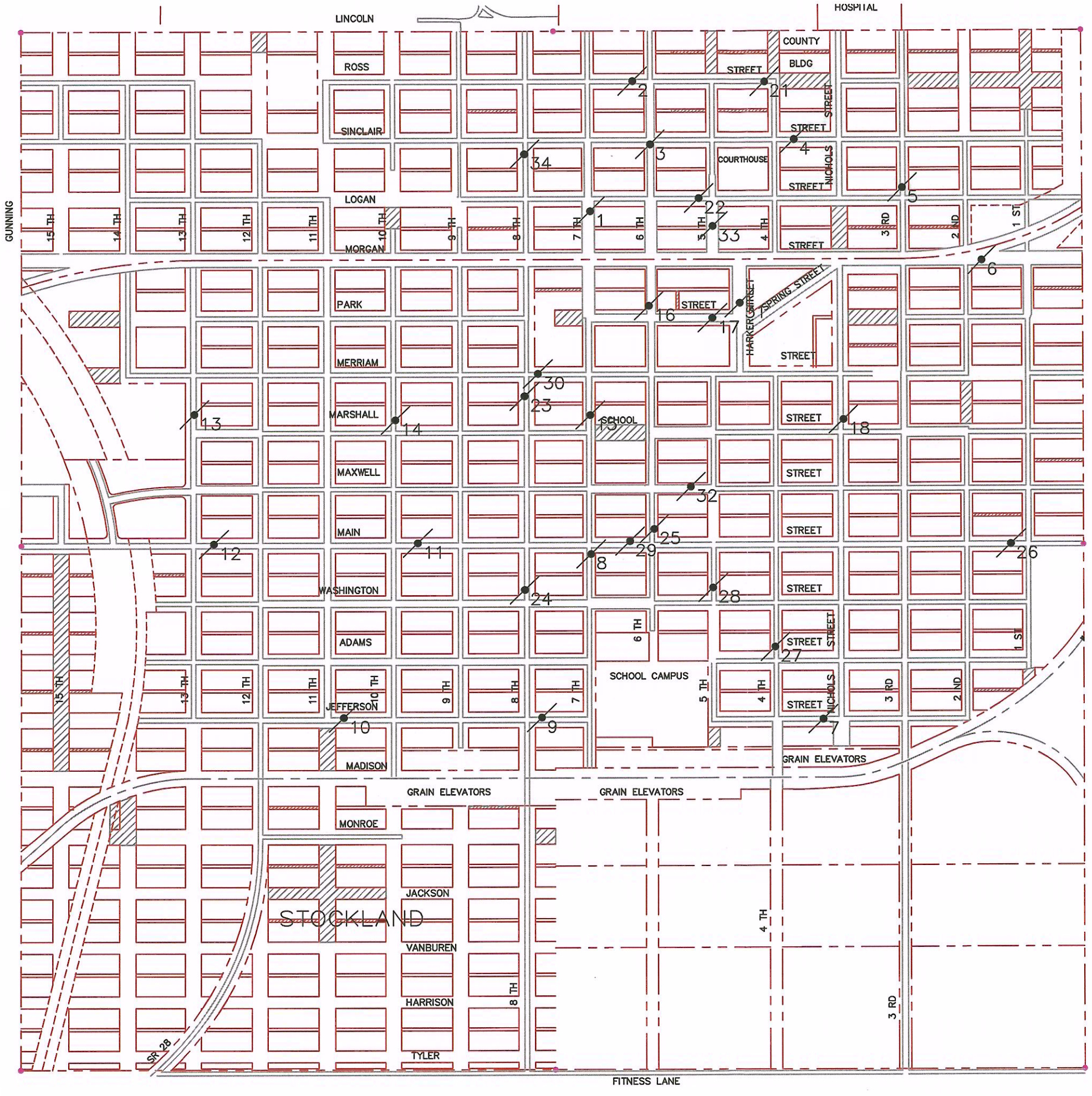
STREET CLASSIFICATION

FEDERAL CLASSIFICATIONS

- 02 RURAL PRINCIPLE ARTERIAL
- 06 RURAL MINOR ARTERIAL
- 07 RURAL MAJOR COLLECTOR

- SCHOOL BUS ROUTE
- TRUCK ROUTE

CENTURY WEST CORPORATION



CITY OF DAVENPORT

FIGURE 2-4

PAVEMENT CORE SAMPLES

LEGEND

LEGEND

10 CORE SAMPLE SYMBOL W/ CORRESPONDING DATA NUMBER

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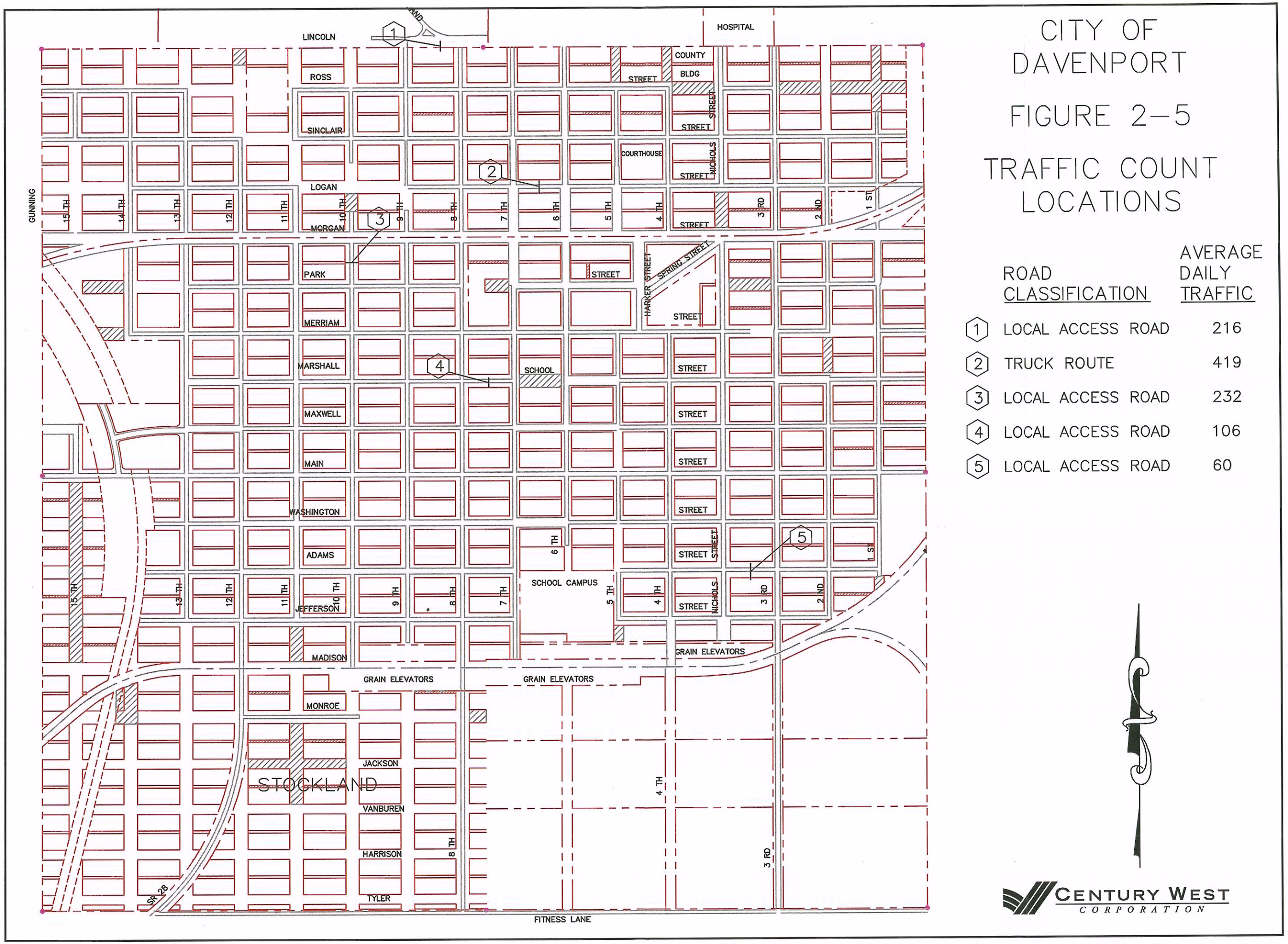


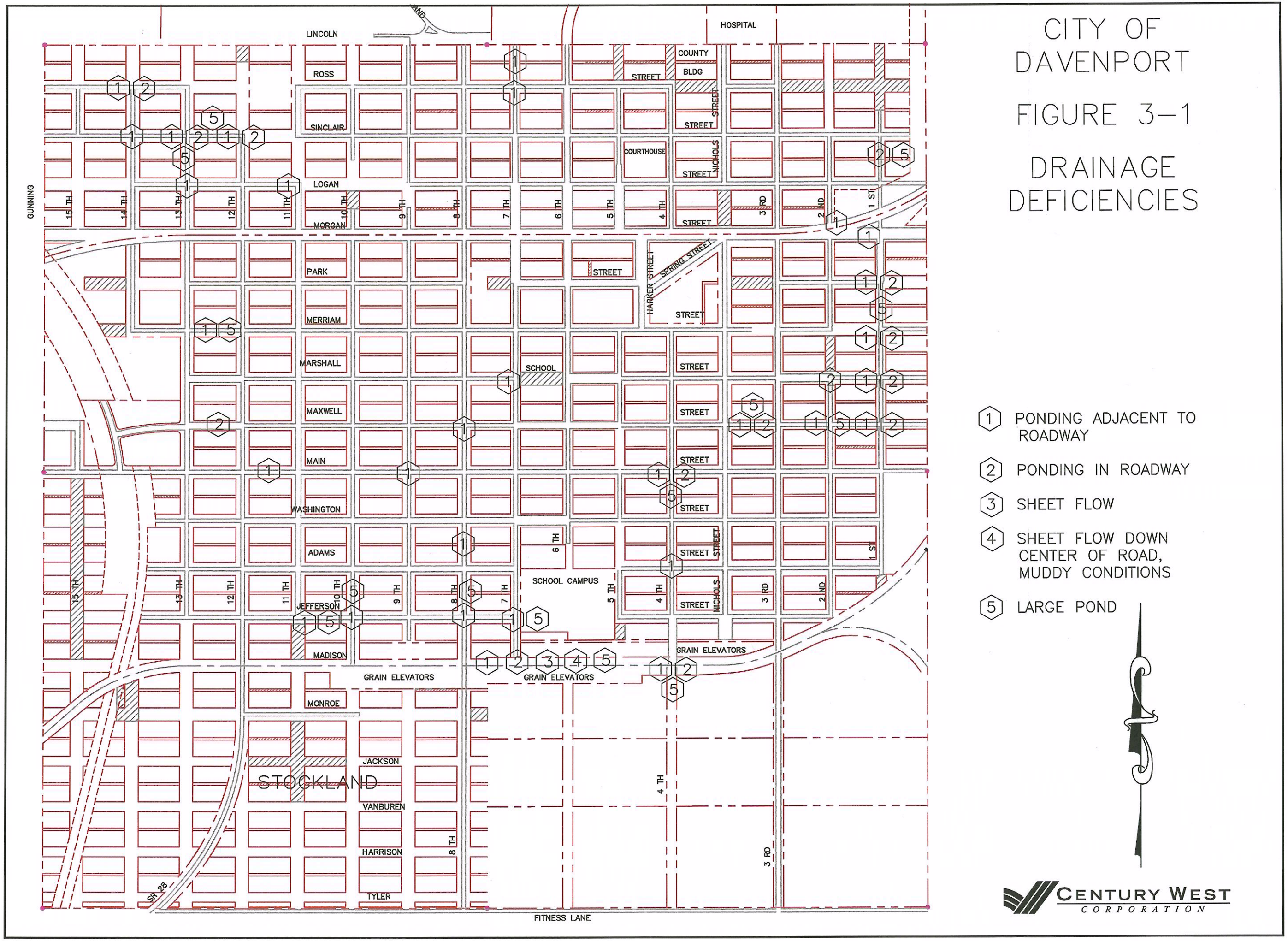
CITY OF DAVENPORT

FIGURE 2–5

TRAFFIC COUNT LOCATIONS

	ROAD CLASSIFICATION	AVERAGE DAILY TRAFFIC
1	LOCAL ACCESS ROAD	216
2	TRUCK ROUTE	419
3	LOCAL ACCESS ROAD	232
4	LOCAL ACCESS ROAD	106
5	LOCAL ACCESS ROAD	60

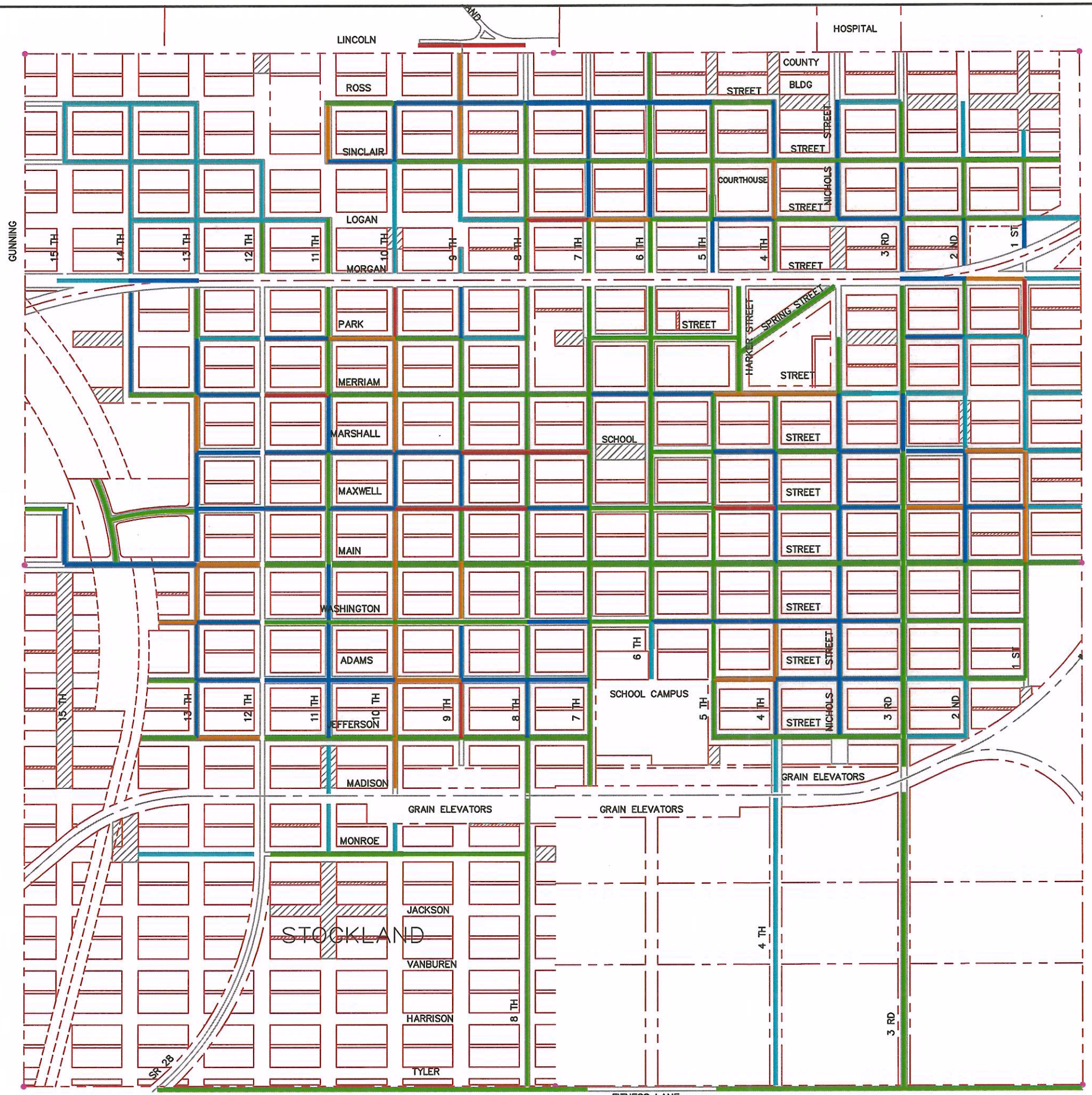
CENTURY WEST CORPORATION


CITY OF DAVENPORT
FIGURE 3-1
DRAINAGE DEFICIENCIES
1 PONDING ADJACENT TO ROADWAY
2 PONDING IN ROADWAY
3 SHEET FLOW
4 SHEET FLOW DOWN CENTER OF ROAD, MUDDY CONDITIONS
5 LARGE POND
LINCOLN
HOSPITAL
COUNTY BLDG
ROSS
SINCLAIR
LOGAN
MORGAN
PARK
MERRIAM
MARSHALL
MAXWELL
MAIN
WASHINGTON
ADAMS
JEFFERSON
MADISON
MONROE
JACKSON
VANBUREN
HARRISON
TYLER
STOCKLAND
SCHOOL
SCHOOL CAMPUS
COURTHOUSE
GRAIN ELEVATORS
SPRING STREET
HARRIER STREET
NICHOLS STREET
GUNNING
15 TH
14 TH
13 TH
12 TH
11 TH
10 TH
9 TH
8 TH
7 TH
6 TH
5 TH
4 TH
3 RD
2 ND
1 ST
SR 28
FITNESS LANE
CENTURY WEST CORPORATION

CITY OF DAVENPORT

FIGURE 4–1

STREET CONDITION RATINGS



GRAVEL ROAD

PCR: 0–24

PCR: 25–49

PCR: 50–74

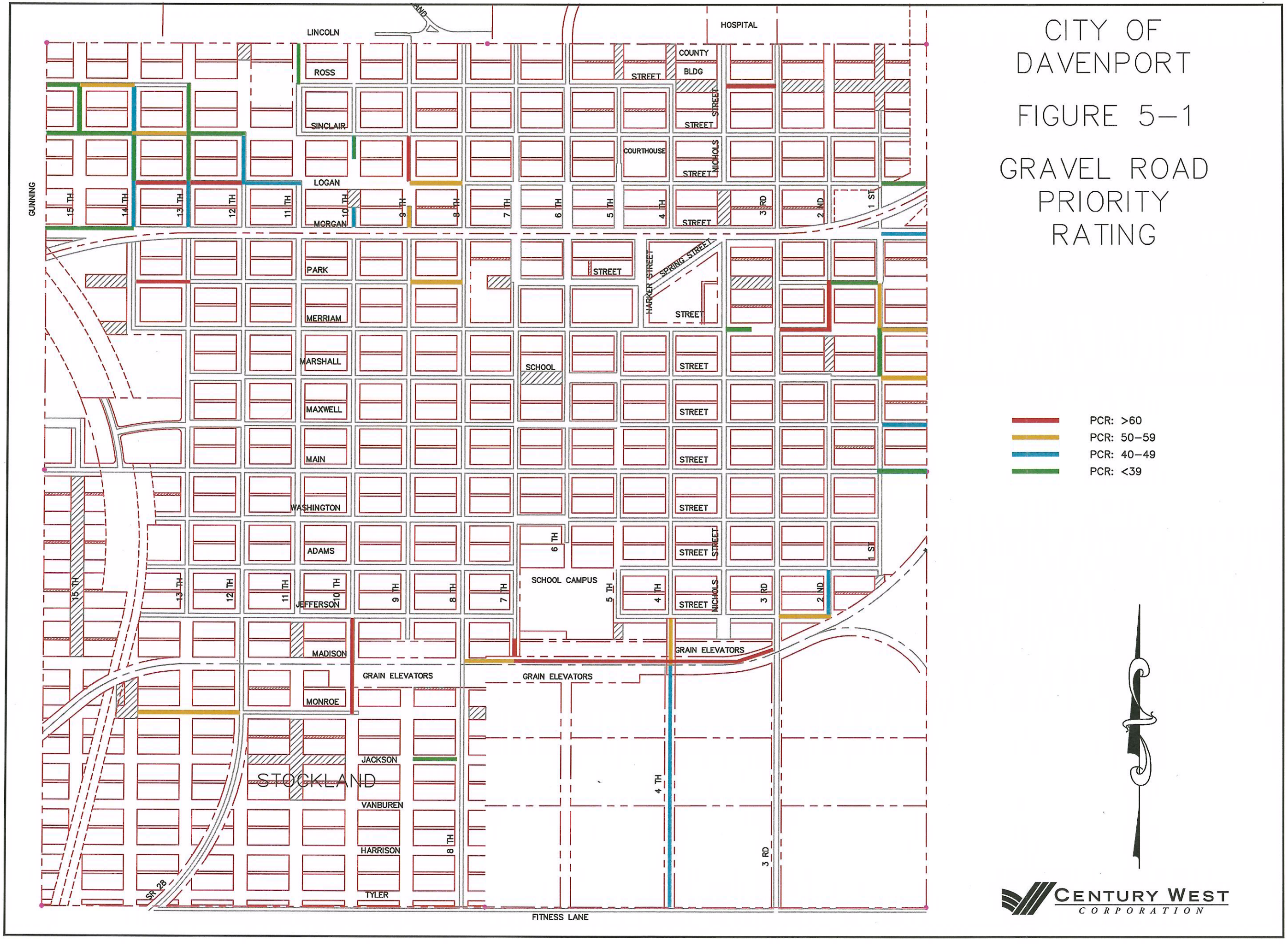
PCR: 75–100

CENTURY WEST CORPORATION

CITY OF DAVENPORT

FIGURE 5–1

GRAVEL ROAD PRIORITY RATING

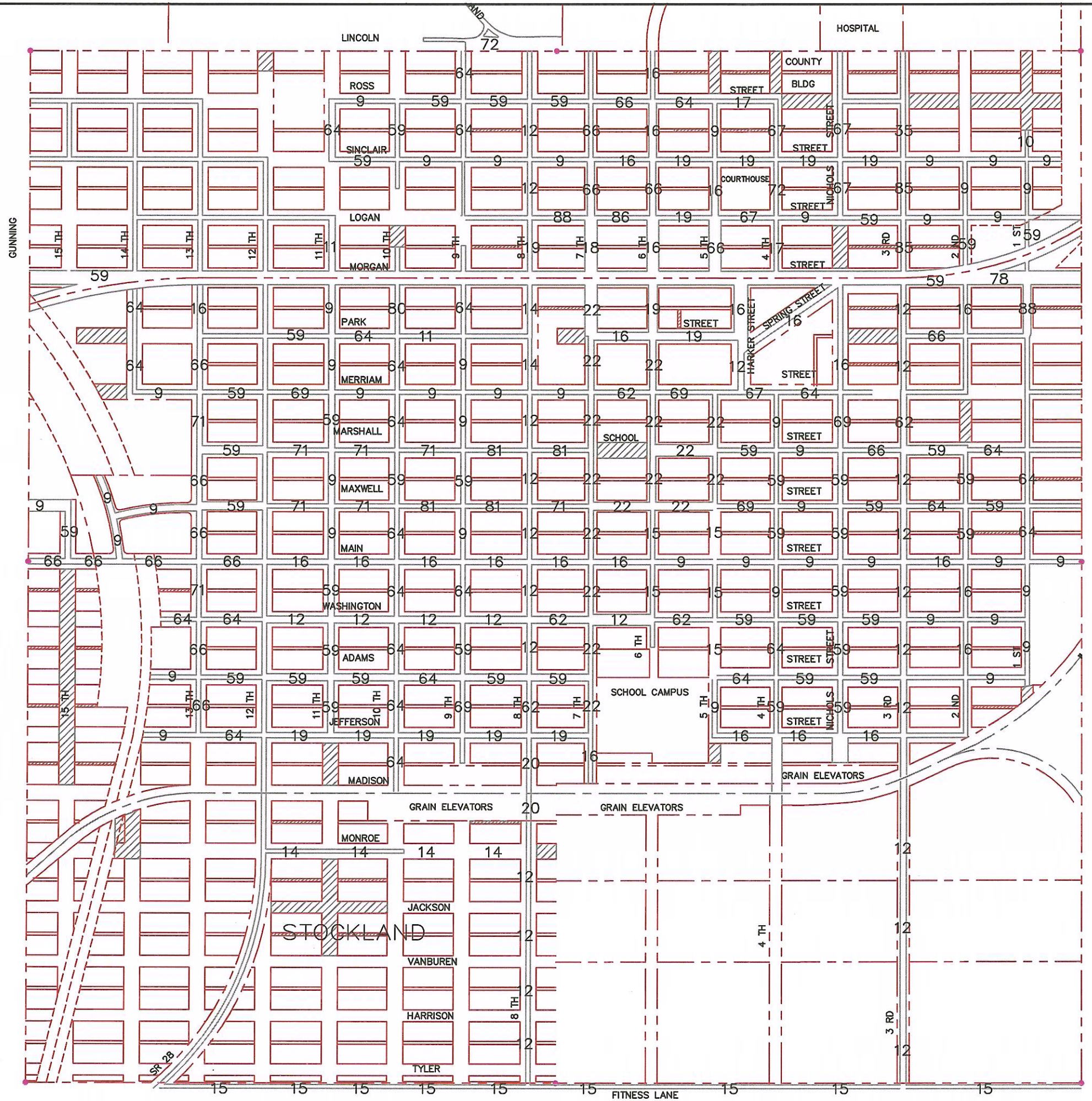


CENTURY WEST CORPORATION

CITY OF DAVENPORT

FIGURE 6–1

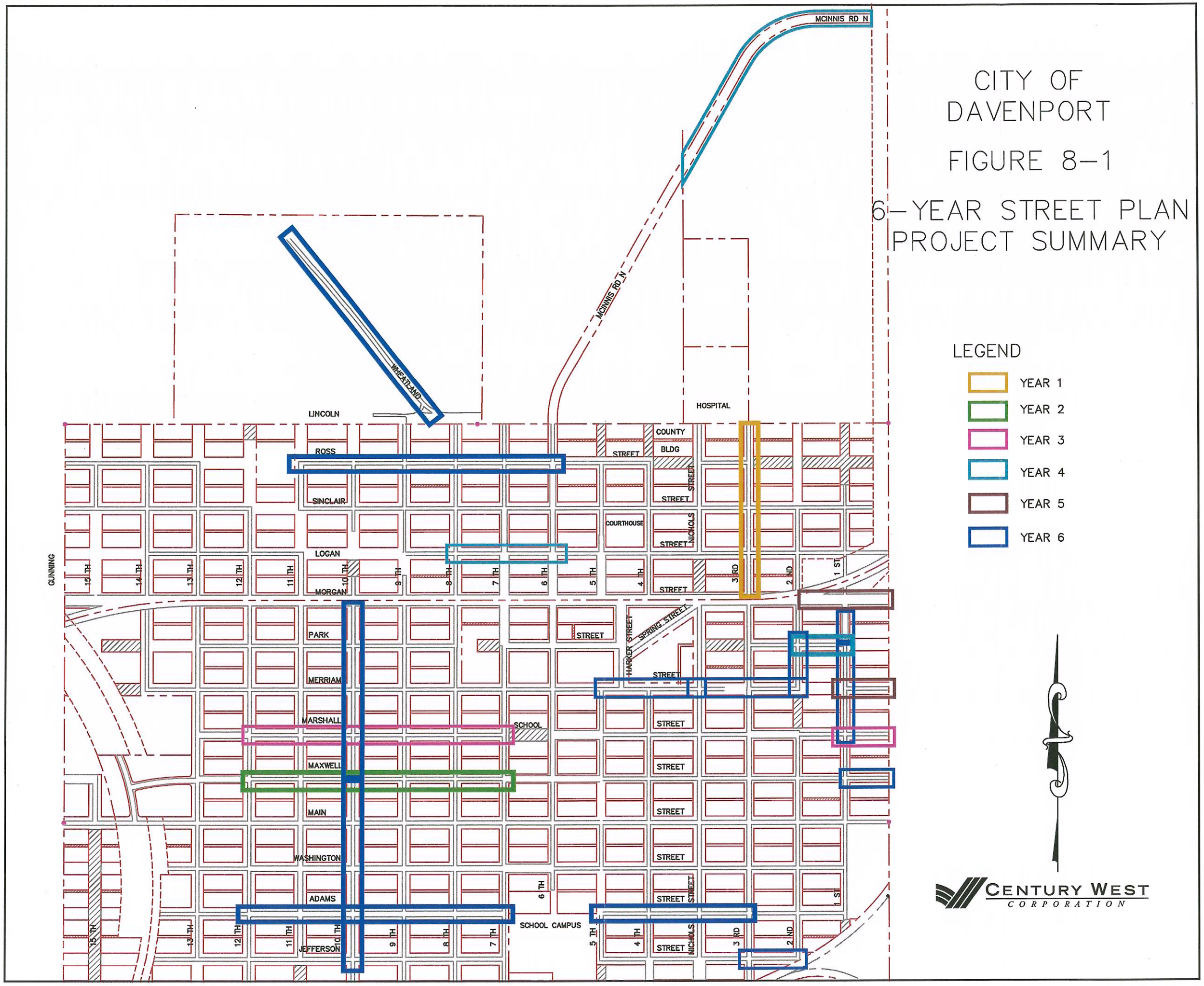
STREET SEGMENT PRIORITIZATION

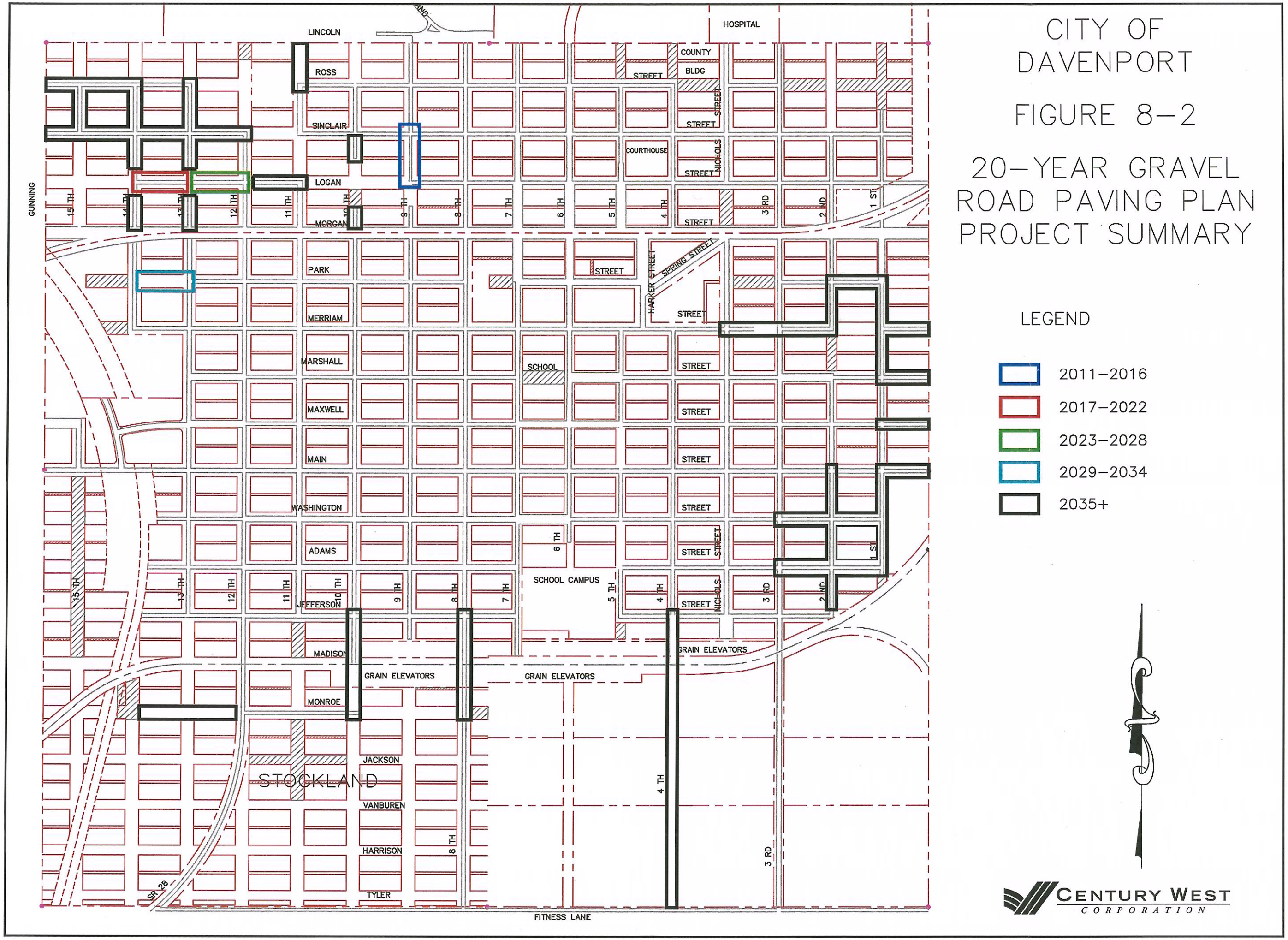


LEGEND

65 PRIORITIZATION TOTAL POINTS

CENTURY WEST CORPORATION


CITY OF DAVENPORT
FIGURE 8-1
6-YEAR STREET PLAN PROJECT SUMMARY
LEGEND
YEAR 1
YEAR 2
YEAR 3
YEAR 4
YEAR 5
YEAR 6
MCINNIS RD N
MCINNIS RD N
WHEATLAND
HOSPITAL
LINCOLN
ROSS
SINCLAIR
LOGAN
MORGAN
PARK
MERRIAM
MARSHALL
MAXWELL
MAIN
WASHINGTON
ADAMS
JEFFERSON
GUNNING
COUNTY BLDG
COURTHOUSE
SCHOOL
SCHOOL CAMPUS
HARRIER STREET
SPRING STREET
NICHOLS STREET
STREET
15 TH
14 TH
13 TH
12 TH
11 TH
10 TH
9 TH
8 TH
7 TH
6 TH
5 TH
4 TH
3RD
2ND
1 ST
CENTURY WEST CORPORATION


CITY OF DAVENPORT
FIGURE 8-2
20-YEAR GRAVEL ROAD PAVING PLAN PROJECT SUMMARY
LEGEND
2011-2016
2017-2022
2023-2028
2029-2034
2035+
LINCOLN
HOSPITAL
COUNTY BLDG
ROSS
SINCLAIR
COURTHOUSE
LOGAN
MORGAN
GUNNING
PARK
MERRIAM
MARSHALL
SCHOOL
MAXWELL
MAIN
WASHINGTON
ADAMS
SCHOOL CAMPUS
JEFFERSON
MADISON
GRAIN ELEVATORS
MONROE
JACKSON
STOCKLAND
VANBUREN
HARRISON
TYLER
SR 28
FITNESS LANE
HARKER STREET
SPRING STREET
NICHOLS STREET
STREET
15 TH
14 TH
13 TH
12 TH
11 TH
10 TH
9 TH
8 TH
7 TH
6 TH
5 TH
4 TH
3 RD
2 ND
1 ST
CENTURY WEST CORPORATION

APPENDIX

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

APPENDIX A

GRAVEL COST ESTIMATES

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

Gravel road pavement plan

9th between Sinclair and Logan

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,105.00	LS	1.00	$1,105.00
2	Grade and Crown Road	$1,400.00	LS	1.00	$1,400.00
3	Crushed Surfacing Top Course 4"	$45.00	CY	88.00	$3,960.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	165.00	$12,045.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
7	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	20.00	$460.00

SUBTOTAL - CONSTRUCTION COST	$23,500.00
Contingency (10%)	$2,400.00
TOTAL EST. CONSTRUCTION COST	$25,900.00

Gravel road pavement plan

Logan 14th to 13th

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,070.00	LS	1.00	$1,070.00
2	Grade and Crown the Road	$1,300.00	LS	1.00	$1,300.00
3	Crushed Surfacing Top Course 4"	$45.00	CY	88.00	$3,960.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	165.00	$12,045.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	35.00	$805.00

SUBTOTAL - CONSTRUCTION COST	$23,700.00
Contingency (10%)	$2,400.00
TOTAL EST. CONSTRUCTION COST	$26,100.00

Gravel road pavement plan

Logan 13th to 12th

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,070.00	LS	1.00	$1,070.00
2	Grade and Crown the Road	$1,300.00	LS	1.00	$1,300.00
3	Crushed Surfacing Top Course 4"	$45.00	CY	88.00	$3,960.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	165.00	$12,045.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	35.00	$805.00

SUBTOTAL - CONSTRUCTION COST	$23,700.00
Contingency (10%)	$2,400.00
TOTAL EST. CONSTRUCTION COST	$26,100.00

Gravel road pavement plan

Park 14th to 13th

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,070.00	LS	1.00	$1,070.00
2	Grade and Crown the Road	$1,300.00	LS	1.00	$1,300.00
3	Crushed Surfacing Top Course 4"	$45.00	CY	88.00	$3,960.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	165.00	$12,045.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	35.00	$805.00

SUBTOTAL - CONSTRUCTION COST	$23,700.00
Contingency (10%)	$2,400.00
TOTAL EST. CONSTRUCTION COST	$26,100.00

Year 3

Gravel road pavement plan

2nd Ave from Park to Merriam
Merriam Street from 2nd to Nichols

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$2,935.00	LS	1.00	$2,935.00
2	Grade and Crown Road	$3,900.00	LS	1.00	$3,900.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	210.00	$9,450.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	400.00	$29,200.00
5	Catch Basin, Type 1	$1,250.00	EA	4.00	$5,000.00
6	Drywell, Type B	$3,250.00	EA	3.00	$9,750.00
7	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	100.00	$2,300.00

SUBTOTAL - CONSTRUCTION COST	$62,500.00
Contingency (10%)	$6,300.00
TOTAL EST. CONSTRUCTION COST	$68,800.00

Gravel road pavement plan

Logan Street from 13th to 11th
13th Ave from Sinclair to Logan

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,600.00	LS	1.00	$1,600.00
2	Grade and Crown the Road	$2,600.00	LS	1.00	$2,600.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	130.00	$5,850.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	250.00	$18,250.00
5	Catch Basin, Type 1	$1,250.00	EA	2.00	$2,500.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	40.00	$920.00

SUBTOTAL - CONSTRUCTION COST	$35,000.00
Contingency (10%)	$3,500.00
TOTAL EST. CONSTRUCTION COST	$38,500.00

Gravel road pavement plan

1st Ave from Park to Marshall
Merriam from 1st East to City Limits
Marshall from 1st East to City Limits

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$2,070.00	LS	1.00	$2,070.00
2	Grade and Crown the Road	$5,200.00	LS	1.00	$5,200.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	110.00	$4,950.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	200.00	$14,600.00
5	Catch Basin, Type 1	$1,250.00	EA	3.00	$3,750.00
6	Drywell, Type B	$3,250.00	EA	3.00	$9,750.00
7	CL III Reinf Concrete Culvert Pipe, 38-inch	$62.50	LF	32.00	$2,000.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	100.00	$2,300.00

SUBTOTAL - CONSTRUCTION COST	$44,600.00
Contingency (10%)	$4,500.00
TOTAL EST. CONSTRUCTION COST	$49,100.00

Gravel road pavement plan

4th Ave from Jefferson to Fitness

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$4,280.00	LS	1.00	$4,280.00
2	Grade and Crown the Road	$6,500.00	LS	1.00	$6,500.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	300.00	$13,500.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	600.00	$43,800.00
5	Catch Basin, Type 1	$1,250.00	EA	6.00	$7,500.00
6	Drywell, Type B	$3,250.00	EA	4.00	$13,000.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	120.00	$2,760.00

SUBTOTAL - CONSTRUCTION COST	$91,300.00
Contingency (10%)	$9,100.00
TOTAL EST. CONSTRUCTION COST	$100,400.00

Gravel road pavement plan

Monroe Street from 12th to 14th

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$2,300.00	LS	1.00	$2,300.00
2	Grade and Crown Road	$2,800.00	LS	1.00	$2,800.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	135.00	$6,075.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	270.00	$19,710.00
5	Catch Basin, Type 1	$1,250.00	EA	2.00	$2,500.00
6	Drywell, Type B	$3,250.00	EA	2.00	$6,500.00
7	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	60.00	$1,380.00

SUBTOTAL - CONSTRUCTION COST	$41,300.00
Contingency (10%)	$4,100.00
TOTAL EST. CONSTRUCTION COST	$45,400.00

Gravel road pavement plan

Logan street between 9th and 8th

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,125.00	LS	1.00	$1,125.00
2	Grade and Crown Road	$1,400.00	LS	1.00	$1,400.00
3	Crushed Surfacing Top Course 4"	$45.00	CY	88.00	$3,960.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	165.00	$12,045.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
7	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	40.00	$920.00

SUBTOTAL - CONSTRUCTION COST	$24,000.00
Contingency (10%)	$2,400.00
TOTAL EST. CONSTRUCTION COST	$26,400.00

Gravel road pavement plan

Jefferson from 2nd to 3rd

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,190.00	LS	1.00	$1,190.00
2	Grade and Crown the Road	$1,400.00	LS	1.00	$1,400.00
3	Crushed Surfacing Top Course 4"	$45.00	CY	85.00	$3,825.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	160.00	$11,680.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
7	CL III Reinf Concrete Culvert Pipe, 38-inch	$62.50	LF	32.00	$2,000.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	30.00	$690.00

SUBTOTAL - CONSTRUCTION COST	$25,300.00
Contingency (10%)	$2,500.00
TOTAL EST. CONSTRUCTION COST	$27,800.00

Gravel road pavement plan

Ross Street from West City Limits to 14th
15th Ave from Ross to Sinclair
14th Ave from Ross to Sinclair
13th Ave from Ross to Sinclair

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$4,060.00	LS	1.00	$4,060.00
2	Grade and Crown the Road	$6,500.00	LS	1.00	$6,500.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	330.00	$14,850.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	600.00	$43,800.00
5	Catch Basin, Type 1	$1,250.00	EA	4.00	$5,000.00
6	Drywell, Type B	$3,250.00	EA	3.00	$9,750.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	120.00	$2,760.00

SUBTOTAL - CONSTRUCTION COST	$86,700.00
Contingency (10%)	$8,700.00
TOTAL EST. CONSTRUCTION COST	$95,400.00

Year 1

Gravel road pavement plan

2nd Ave from Adams to Jefferson

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$950.00	LS	1.00	$950.00
2	Grade and Crown the Road	$1,300.00	LS	1.00	$1,300.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	67.00	$3,015.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	135.00	$9,855.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
7	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	20.00	$460.00

SUBTOTAL - CONSTRUCTION COST	$20,100.00
Contingency (10%)	$2,000.00
TOTAL EST. CONSTRUCTION COST	$22,100.00

Gravel road pavement plan

10th Ave from Sinclair to the end
10th Ave from Morgan to the end

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,190.00	LS	1.00	$1,190.00
2	Grade and Crown Road	$1,500.00	LS	1.00	$1,500.00
3	Crushed Surfacing Top Course 4"	$45.00	CY	70.00	$3,150.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	130.00	$9,490.00
5	Catch Basin, Type 1	$1,250.00	EA	2.00	$2,500.00
6	Drywell, Type B	$3,250.00	EA	2.00	$6,500.00
7	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	40.00	$920.00

SUBTOTAL - CONSTRUCTION COST	$25,300.00
Contingency (10%)	$2,500.00
TOTAL EST. CONSTRUCTION COST	$27,800.00

Gravel road pavement plan

Maxwell from 1st East to City Limits
11th Ave from Ross North to City Limits

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,825.00	LS	1.00	$1,825.00
2	Grade and Crown the Road	$2,600.00	LS	1.00	$2,600.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	130.00	$5,850.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	250.00	$18,250.00
5	Catch Basin, Type 1	$1,250.00	EA	2.00	$2,500.00
6	Drywell, Type B	$3,250.00	EA	2.00	$6,500.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	60.00	$1,380.00

SUBTOTAL - CONSTRUCTION COST	$38,900.00
Contingency (10%)	$3,900.00
TOTAL EST. CONSTRUCTION COST	$42,800.00

Year 2

Gravel road pavement plan

Park Street from 2nd to 1st
13th Ave from Logan to Morgan
14th Ave from Logan to Morgan

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$2,730.00	LS	1.00	$2,730.00
2	Grade and Crown the Road	$3,900.00	LS	1.00	$3,900.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	200.00	$9,000.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	375.00	$27,375.00
5	Catch Basin, Type 1	$1,250.00	EA	3.00	$3,750.00
6	Drywell, Type B	$3,250.00	EA	3.00	$9,750.00
7	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	75.00	$1,725.00

SUBTOTAL - CONSTRUCTION COST	$58,200.00
Contingency (10%)	$5,800.00
TOTAL EST. CONSTRUCTION COST	$64,000.00

12th Ave. from Sinclair to Logan

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,165.00	LS	1.00	$1,165.00
2	Grade and Crown Road	$1,500.00	LS	1.00	$1,500.00
3	Crushed Surfacing Top Course 4"	$45.00	CY	88.00	$3,960.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	165.00	$12,045.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
7	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	35.00	$805.00

SUBTOTAL - CONSTRUCTION COST	$24,000.00
Contingency (10%)	$2,400.00
TOTAL EST. CONSTRUCTION COST	$26,400.00

Gravel road pavement plan

Main Street from 1st East to City Limits

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$1,200.00	LS	1.00	$1,200.00
2	Grade and Crown the Road	$1,400.00	LS	1.00	$1,400.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	85.00	$3,825.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	160.00	$11,680.00
5	Catch Basin, Type 1	$1,250.00	EA	1.00	$1,250.00
6	Drywell, Type B	$3,250.00	EA	1.00	$3,250.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	30.00	$690.00

SUBTOTAL - CONSTRUCTION COST	$23,300.00
Contingency (10%)	$2,300.00
TOTAL EST. CONSTRUCTION COST	$25,600.00

Gravel road pavement plan

Sinclair Street from West City Limits to 12th
14th Ave from Sinclair to Logan

By: J. Brotzler Century West Engineering
Date: May 25, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Mobilization	$4,040.00	LS	1.00	$4,040.00
2	Grade and Crown the Road	$6,500.00	LS	1.00	$6,500.00
3	Crushed Surfacing Top Course 2"	$45.00	CY	320.00	$14,400.00
4	AC Pavement, Class A (3.5" Thick)	$73.00	TN	600.00	$43,800.00
5	Catch Basin, Type 1	$1,250.00	EA	4.00	$5,000.00
6	Drywell, Type B	$3,250.00	EA	3.00	$9,750.00
8	Solid Wall PVC Storm Sewer Pipe, 8-inch	$23.00	LF	125.00	$2,875.00

SUBTOTAL - CONSTRUCTION COST	$86,400.00
Contingency (10%)	$8,600.00
TOTAL EST. CONSTRUCTION COST	$95,000.00

APPENDIX B

6-YEAR STREET PLAN COST ESTIMATES

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

Estimated Costs for Pavement Rehabilitation

3rd Ave Reconstruction (Morgan to Lincoln)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Reconstruction (6" HMA over 12" Base Course)	$122.97	SY	2500.00	$307,425.00
2	Pavement Reconstruction (2" HMA over 6" Base Course)	$40.99	SY	2500.00	$102,475.00
3	Curb	$30.00	LF	2230.00	$66,900.00
4	Sidewalk (6' wide)	$25.00	SY	1487.00	$37,175.00
5	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	6.00	$19,500.00

SUBTOTAL - CONSTRUCTION COST	$533,500.00
Contingency (30%)	$160,100.00
Engineering (25%)	$173,400.00
TOTAL EST. CONSTRUCTION COST	$867,000.00

Improvements associated with this cost estimate include:
557 LF of 40' wide roadway with a pavement section of 6" ACP over 12" Base Course. (Assumed truck route from Morgan to Sinclair.
558 LF of 40' wide roadway with a pavement section of 2" ACP over 6" Base Course. (Assume local access route from Sinclair to Lincoln.
Curb and gutter installed on both sides of the reconstructed road.
6' wide concrete sidewalk constructed on both sides of the reconstructed road.
6 Type B drywells constructed adjacent to the reconstructed road.

Estimated Costs for Pavement Rehabilitation

Maxwell Street Overlay (7th Ave to 12th Ave)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Overlay 1"	$25.00	SY	4344.00	$108,600.00
2	Curb	$30.00	LF	3258.00	$97,740.00
3	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	10.00	$32,500.00

SUBTOTAL - CONSTRUCTION COST	$238,800.00
Contingency (30%)	$71,600.00
Engineering (25%)	$77,600.00
TOTAL EST. CONSTRUCTION COST	$388,000.00

Improvements associated with this cost estimate include:
1" pavement overlay on 1,629 LF of 24' wide road.
Curb and gutter installed on both sides of the overlayed road.
10 Type B drywells constructed adjacent to the overlayed road.

Estimated Costs for Pavement Rehabilitation

Marshall St. Overlay (7th Ave. to 12th Ave.)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Overlay 1"	$25.00	SY	4280.00	$107,000.00
2	Curb	$30.00	LF	3210.00	$96,300.00
3	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	10.00	$32,500.00

SUBTOTAL - CONSTRUCTION COST	$235,800.00
Contingency (30%)	$70,700.00
Engineering (25%)	$76,600.00
TOTAL EST. CONSTRUCTION COST	$383,100.00

Improvements associated with this cost estimate include:
1" pavement overlay on 1,605 LF of 24' wide road.
Curb and gutter installed on both sides of the overlayed road.
10 Type B drywells constructed adjacent to the overlayed road.

Estimated Costs for Pavement Rehabilitation

Marshall Street Reconstruction (1st Ave to the City Limits)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Reconstruction (2" HMA over 6" Base Course)	$40.99	SY	776.00	$31,808.24
2	Curb	$30.00	LF	582.00	$17,460.00
3	Sidewalk (6' wide)	$25.00	SY	388.00	$9,700.00
4	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	2.00	$6,500.00

SUBTOTAL - CONSTRUCTION COST	$65,500.00
Contingency (30%)	$19,700.00
Engineering (25%)	$21,300.00
TOTAL EST. CONSTRUCTION COST	$106,500.00

291 LF of 24' wide roadway with a pavement section of 2" HMA over 6" Base Course.
Curb and gutter installed on both sides of the reconstructed road.
6' wide concrete sidewalk constructed on both sides of the reconstructed road.
2 Type B drywells constructed adjacent to the reconstructed road.

Estimated Costs for Pavement Rehabilitation

Logan St. Reconstruction (6th Ave. to 8th Ave.)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Reconstruction (6" HMA over 12" Base Course)	$122.97	SY	2735.00	$336,322.95
2	Curb	$30.00	LF	1230.00	$36,900.00
3	Sidewalk (6' wide)	$25.00	SY	820.00	$20,500.00
4	Drywell Frame and Cover w/Grate Lid	$3,250.00	EA	4.00	$13,000.00

SUBTOTAL - CONSTRUCTION COST	$406,700.00
Contingency (30%)	$122,000.00
Engineering (25%)	$132,200.00
TOTAL EST. CONSTRUCTION COST	$660,900.00

Improvements associated with this cost estimate include:
615 LF of 40' wide roadway with a pavement section of 6" ACP over 12" Base Course.
Curb and gutter installed on both sides of the reconstructed road.
6' wide concrete sidewalk constructed on both sides of the reconstructed road.
4 Type B drywells constructed adjacent to the reconstructed road.

Estimated Costs for Pavement Rehabilitation

McGinnis Road Bituminous Surface Treatment

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
	Mobilization	$3,500.00	LS	1	$3,500.00
1	Bitunimous Surface Treatment (3 shot)	$11.34	SY	9856.00	$111,767.04

SUBTOTAL - CONSTRUCTION COST	$115,300.00
Engineering	$1,200.00
County Share	($59,905.00)
TOTAL EST. CONSTRUCTION COST	$56,595.00

Improvements associated with this cost estimate include:
Three shots of BST on 3696 LF of 24' wide road.

Estimated Costs for Pavement Rehabilitation

Morgan Street Reconstruction (2nd Ave to the City Limits)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Reconstruction (2" HMA over 6" Base Course)	$40.99	SY	4667.00	$191,300.33
2	Curb	$30.00	LF	1200.00	$36,000.00
3	Sidewalk (6' wide)	$25.00	SY	800.00	$20,000.00
4	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	4.00	$13,000.00

SUBTOTAL - CONSTRUCTION COST	$260,300.00
Contingency (30%)	$78,100.00
Engineering (25%)	$84,600.00
TOTAL EST. CONSTRUCTION COST	$423,000.00

600 LF of 70' wide roadway with a pavement section of 2" HMA over 6" Base Course.
Curb and gutter installed on both sides of the reconstructed road.
6' wide concrete sidewalk constructed on both sides of the reconstructed road.
4 Type B drywells constructed adjacent to the reconstructed road.

Estimated Costs for Pavement Rehabilitation

Merriam Street Reconstruction (1st Ave to the City Limits)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Reconstruction (2" HMA over 6" Base Course)	$40.99	SY	776.00	$31,808.24
2	Curb	$30.00	LF	582.00	$17,460.00
3	Sidewalk (6' wide)	$25.00	SY	388.00	$9,700.00
4	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	2.00	$6,500.00

SUBTOTAL - CONSTRUCTION COST	$65,500.00
Contingency (30%)	$19,700.00
Engineering (25%)	$21,300.00
TOTAL EST. CONSTRUCTION COST	$106,500.00

291 LF of 24' wide roadway with a pavement section of 2" HMA over 6" Base Course.
Curb and gutter installed on both sides of the reconstructed road.
6' wide concrete sidewalk constructed on both sides of the reconstructed road.
2 Type B drywells constructed adjacent to the reconstructed road.

Estimated Costs for Pavement Rehabilitation

1st Ave Reconstruction (SR2 to Park St.)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Reconstruction (2" HMA over 6" Base Course)	$40.99	SY	1560.00	$63,944.40
2	Curb	$30.00	LF	720.00	$21,600.00
3	Sidewalk (6' wide)	$25.00	SY	480.00	$12,000.00
4	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	2.00	$6,500.00

SUBTOTAL - CONSTRUCTION COST	$104,000.00
Contingency (30%)	$31,200.00
Engineering (25%)	$33,800.00
TOTAL EST. CONSTRUCTION COST	$169,000.00

360 LF of 39' wide roadway with a pavement section of 2" HMA over 6" Base Course.
Curb and gutter installed on both sides of the reconstructed road.
6' wide concrete sidewalk constructed on both sides of the reconstructed road.
2 Type B drywells constructed adjacent to the reconstructed road.

Estimated Costs for Pavement Rehabilitation

1st Ave Reconstruction (Park to Marshall)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Reconstruction (2" HMA over 6" Base Course)	$40.99	SY	1544.00	$63,288.56
2	Curb	$30.00	LF	1158.00	$34,740.00
3	Sidewalk (6' wide)	$25.00	SY	772.00	$19,300.00
4	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	4.00	$13,000.00

SUBTOTAL - CONSTRUCTION COST	$130,300.00
Contingency (30%)	$39,100.00
Engineering (25%)	$42,400.00
TOTAL EST. CONSTRUCTION COST	$211,800.00

579 LF of 24' wide roadway with a pavement section of 2" HMA over 6" Base Course.
Curb and gutter installed on both sides of the reconstructed road.
6' wide concrete sidewalk constructed on both sides of the reconstructed road.
4 Type B drywells constructed adjacent to the reconstructed road.

Estimated Costs for Pavement Rehabilitation

10th Ave. Overlay (Morgan to Maxwell)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Overlay 1"	$25.00	SY	3216.00	$80,400.00
2	Curb	$30.00	LF	2412.00	$72,360.00
3	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	8.00	$26,000.00

SUBTOTAL - CONSTRUCTION COST	$178,800.00
Contingency (30%)	$53,600.00
Engineering (25%)	$58,100.00
TOTAL EST. CONSTRUCTION COST	$290,500.00

Improvements associated with this cost estimate include:
1" pavement overlay on 1,206 LF of 24' wide road.
Curb and gutter installed on both sides of the overlayed road.
8 Type B drywells constructed adjacent to the overlayed road.

Estimated Costs for Pavement Rehabilitation

10th Ave. Overlay (Maxwell to Jefferson)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Overlay 1"	$25.00	SY	3128.00	$78,200.00
2	Curb	$30.00	LF	2345.00	$70,350.00
3	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	8.00	$26,000.00

SUBTOTAL - CONSTRUCTION COST	$174,600.00
Contingency (30%)	$52,400.00
Engineering (25%)	$56,800.00
TOTAL EST. CONSTRUCTION COST	$283,800.00

Improvements associated with this cost estimate include:
1" pavement overlay on 1,173 LF of 24' wide road.
Curb and gutter installed on both sides of the overlayed road.
8 Type B drywells constructed adjacent to the overlayed road.

Estimated Costs for Pavement Rehabilitation

Adams Street Grind and Replace (7th Ave to 12th Ave)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Grind and Replace	$25.00	SY	6608.00	$165,200.00
2	Curb	$30.00	LF	3304.00	$99,120.00
3	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	10.00	$32,500.00

SUBTOTAL - CONSTRUCTION COST	$296,800.00
Contingency (30%)	$89,000.00
Engineering (25%)	$96,500.00
TOTAL EST. CONSTRUCTION COST	$482,300.00

Improvements associated with this cost estimate include:
Grind and replace 1,652 LF of 36' wide road.
Curb and gutter installed on both sides of the road.
10 Type B drywells constructed adjacent to the overlayed road.

Estimated Costs for Pavement Rehabilitation

Wheatland Road Reconstruction

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Reconstruction (2" HMA over 6" Base Course)	$40.99	SY	3867.00	$158,508.33
2	Curb	$30.00	LF	2900.00	$87,000.00

SUBTOTAL - CONSTRUCTION COST	$245,500.00
Contingency (30%)	$73,700.00
Engineering (25%)	$79,800.00
TOTAL EST. CONSTRUCTION COST	$399,000.00

1,450 LF of 24' wide roadway with a pavement section of 2" HMA over 6" Base Course.
Curb and gutter installed on both sides of the reconstructed road.

Estimated Costs for Pavement Rehabilitation

Ross Street Overlay (6th to 11th)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Overlay 1"	$25.00	SY	4365.00	$109,125.00
2	Curb	$29.00	LF	3274.00	$94,946.00
2	Drywell Frame and Cover w/Grate Lid (Type B)	$3,250.00	EA	10.00	$32,500.00

SUBTOTAL - CONSTRUCTION COST	$236,600.00
Contingency (30%)	$71,000.00
Engineering (25%)	$76,900.00
TOTAL EST. CONSTRUCTION COST	$384,500.00

Improvements associated with this cost estimate include:
1" pavement overlay on 1,637 LF of 24' wide road.
Curb and gutter installed on both sides of the overlayed road.
10 Type B drywells constructed adjacent to the overlayed road.

Estimated Costs for Pavement Rehabilitation

Adams Street Overlay (3rd to 5th)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Overlay 1"	$25.00	SY	2605.00	$65,125.00
2	Curb	$29.00	LF	1954.00	$56,666.00
2	Drywell Frame and Cover w/Grate Lid	$3,250.00	EA	4.00	$13,000.00

SUBTOTAL - CONSTRUCTION COST	$134,800.00
Contingency (30%)	$40,400.00
Engineering (25%)	$43,800.00
TOTAL EST. CONSTRUCTION COST	$219,000.00

Improvements associated with this cost estimate include:
1" pavement overlay on 977 LF of 24' wide road.
Curb and gutter installed on both sides of the overlayed road.
4 Type B drywells constructed adjacent to the overlayed road.

Estimated Costs for Pavement Rehabilitation

Mirriam Street Overlay (5th to Nichols)

By: J. Brotzler Century West Engineering
Date: June 2, 2011

		ESTIMATE		PROJECT TOTALS	
ITEM	DESCRIPTION	UNIT COST	UNIT	EST. QTY	TOTAL EST. COST
1	Pavement Overlay 1"	$25.00	SY	1750.00	$43,750.00
2	Curb	$29.00	LF	1310.00	$37,990.00
2	Drywell Frame and Cover w/Grate Lid	$3,250.00	EA	4.00	$13,000.00

SUBTOTAL - CONSTRUCTION COST	$94,700.00
Contingency (30%)	$28,400.00
Engineering (25%)	$30,800.00
TOTAL EST. CONSTRUCTION COST	$153,900.00

Improvements associated with this cost estimate include:
1" pavement overlay on 655 LF of 24' wide road.
Curb and gutter installed on both sides of the overlayed road.
4 Type B drywells constructed adjacent to the overlayed road.

APPENDIX C

PAVEMENT CONDITION RATING TABLES

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

Alligator Cracking

	Low	Medium	High
0 to 1 %	93	86	79
1% to 5%	82	71	59
5% to 10%	72	58	43
10% to 25%	62	48	32
Above 25%	46	32	17

Longitudinal Cracking

	Low	Medium	High
0 to 1 %	100	100	89
1% to 5%	94	85	70
5% to 10%	87	74	46
10% to 25%	78	63	26
Above 25%	n/a	n/a	n/a

Patching

	Low	Medium	High
0 to 1 %	100	95	88
1% to 5%	94	84	73
5% to 10%	86	75	56
10% to 25%	79	62	38
Above 25%	67	42	20

Raveling

	Low	Medium	High
0 to 1 %	100	93	89
1% to 5%	100	88	77
5% to 10%	95	84	64
10% to 25%	92	78	49
Above 25%	86	63	30

Transverse Cracking

	Low	Medium	High
0 to 1 crack per 100 ft.	100	100	100
1 to 5 cracks per 100 ft.	96	90	80
5 to 10 cracks per 100 ft.	91	83	64
10 to 25 cracks per 100 ft.	85	75	51
Above 25 cracks per 100 ft.	85	75	51

PCR Tables for **LOW** Severity Alligator Cracking

StreetWise

0% to 1% Low Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	93	93	93	93	93	93	90	91	86	93	86	86
1% to 5%	90	91	93	90	84	87	86	83	72	79	77	75
5% to 10%	85	88	91	85	75	82	83	76	55	68	68	62
10% to 25%	78	84	89	79	67	76	78	66	42	59	57	50
Above 25%	70	84	85	70	60	76	67	52	35	59	44	38

1% to 5% Low Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	86	86	86	86	86	86	81	83	78	86	78	77
1% to 5%	82	84	86	82	75	79	77	75	64	71	69	66
5% to 10%	76	79	83	76	67	74	75	68	48	60	60	54
10% to 25%	70	75	80	71	59	68	70	59	34	51	50	42
Above 25%	65	75	76	62	50	68	59	45	25	51	37	31

5% to 10% Low Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	79	79	79	79	79	79	74	75	71	79	71	70
1% to 5%	75	76	79	75	68	71	70	67	57	64	62	59
5% to 10%	69	72	75	69	60	66	67	60	41	53	53	48
10% to 25%	62	68	73	63	52	60	62	52	29	44	43	35
Above 25%	55	68	69	55	45	60	52	38	23	44	31	26

10% to 25% Low Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	71	71	71	71	71	71	66	68	63	71	63	62
1% to 5%	67	69	71	67	60	64	62	60	50	57	55	52
5% to 10%	62	65	68	61	53	59	60	53	34	46	46	41
10% to 25%	55	60	65	56	45	53	55	45	24	38	36	30
Above 25%	50	60	61	48	35	53	45	32	15	38	26	20

Above 25% Low Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	60	60	60	60	60	60	55	56	52	60	52	52
1% to 5%	55	57	60	55	50	53	52	49	40	46	44	42
5% to 10%	51	53	56	50	42	48	49	43	26	35	35	30
10% to 25%	45	50	54	45	35	43	45	34	16	29	27	22
Above 25%	35	50	50	38	25	43	36	24	10	29	17	13

NOTE: To use these tables for **Transverse Cracks (TC)** read the % as "number of cracks per 100 ft. of segment length". All other distresses are in percentages as shown.

PCR Tables for **MEDIUM** Severity Alligator Cracking

StreetWise

0% to 1% **Medium Severity Alligator Cracking**

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	90	90	90	90	90	90	85	86	81	90	81	80
1% to 5%	85	86	90	85	78	82	80	77	67	75	72	69
5% to 10%	79	83	86	79	70	76	77	71	50	62	62	57
10% to 25%	73	78	84	74	62	71	73	61	37	53	52	45
Above 25%	65	78	79	65	55	71	62	48	30	53	40	33

1% to 5% **Medium Severity Alligator Cracking**

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	78	78	78	78	78	78	73	75	70	78	70	69
1% to 5%	74	75	78	74	67	71	69	64	56	63	61	59
5% to 10%	69	71	75	68	59	65	64	60	41	52	52	47
10% to 25%	62	67	72	62	52	60	62	51	29	43	42	35
Above 25%	55	67	68	54	45	60	52	38	25	43	30	25

5% to 10% **Medium Severity Alligator Cracking**

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	69	69	69	69	69	69	63	65	60	69	60	60
1% to 5%	64	65	69	64	58	61	60	57	48	54	52	50
5% to 10%	59	62	65	59	50	56	57	51	32	43	43	38
10% to 25%	53	58	62	53	43	51	53	42	22	35	33	28
Above 25%	45	58	59	45	35	51	43	30	15	35	24	19

10% to 25% **Medium Severity Alligator Cracking**

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	61	61	61	61	61	61	56	58	53	61	53	53
1% to 5%	57	59	61	57	51	54	53	50	41	48	45	43
5% to 10%	52	55	58	52	43	50	50	44	27	37	37	32
10% to 25%	46	51	55	47	36	44	46	35	16	30	29	23
Above 25%	40	51	52	39	30	44	36	25	10	30	19	14

Above 25% **Medium Severity Alligator Cracking**

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	50	50	50	50	50	50	45	47	43	50	43	42
1% to 5%	46	48	50	46	41	43	42	40	31	37	35	32
5% to 10%	42	44	47	41	33	39	40	33	19	28	28	24
10% to 25%	35	41	45	36	27	33	35	27	9	21	20	15
Above 25%	30	41	41	30	20	33	27	16	5	21	12	7

NOTE: To use these tables for **Transverse Cracks (TC)** read the % as "number of cracks per 100 ft. of segment length". All other distresses are in percentage as shown.

PCR Tables for **HIGH** Severity Alligator Cracking

StreetWise

0% to 1% High Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	85	85	85	85	85	85	79	80	76	85	76	75
1% to 5%	79	81	85	79	73	76	75	72	62	69	67	64
5% to 10%	75	76	80	74	65	73	72	65	45	58	58	52
10% to 25%	68	73	78	69	57	65	68	56	32	49	48	41
Above 25%	65	73	74	60	48	65	57	43	20	49	35	30

1% to 5% High Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	69	69	69	69	69	69	64	65	61	69	61	60
1% to 5%	65	66	69	65	59	62	60	58	48	55	53	50
5% to 10%	60	62	65	59	51	57	58	52	32	46	44	39
10% to 25%	53	59	63	54	43	52	53	43	22	35	34	29
Above 25%	50	59	59	46	40	52	43	30	19	35	24	19

5% to 10% High Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	58	58	58	58	58	58	53	54	50	58	50	50
1% to 5%	53	55	58	53	48	51	50	47	38	44	42	40
5% to 10%	49	52	54	48	41	46	47	41	24	33	33	30
10% to 25%	43	48	52	43	33	41	43	32	15	27	26	20
Above 25%	40	48	48	35	30	41	33	22	10	27	16	12

10% to 25% High Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	50	50	50	50	50	50	45	47	43	50	43	42
1% to 5%	46	48	50	46	41	43	42	40	31	37	35	32
5% to 10%	42	44	47	41	33	39	40	33	19	28	28	24
10% to 25%	35	41	45	36	27	33	35	27	9	21	20	15
Above 25%	30	41	41	30	20	33	27	16	5	21	12	7

Above 25% High Severity Alligator Cracking

	Low				Medium				High			
Other Distress	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch	LC	TC	Ravel	Patch
0 to 1 %	41	41	41	41	41	41	35	37	33	41	33	32
1% to 5%	36	38	41	36	31	33	32	30	23	29	27	25
5% to 10%	32	34	37	31	25	30	30	26	12	20	20	16
10% to 25%	27	31	35	28	20	26	27	19	4	14	13	8
Above 25%	20	31	31	22	15	26	20	10	2	14	5	2

NOTE: To use these tables for **Transverse Cracks (TC)** read the % as "number of cracks per 100 ft. of segment length". All other distresses are in percentages as shown.

APPENDIX D

PAVEMENT CORE LOGS

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

TRENCH NO. LOCATION 7TH AVE 12' E. ℄, 90' S. LOGAN ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.
1				SURFACE		
				2 1/2" ACP		
				2 1/4" LITEBIT.		
				SILT		

TRENCH NO. LOCATION ROSS ST. @ ℄, 150' W 6th ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.
2				SURFACE		
				1 1/2" LITEBIT.		
				1 1/2" CSTC		
				SILT		

TRENCH NO. LOCATION 6TH AVE 12' W ℄, 50' S. SINCLAIR ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
3				SURFACE		
				2 1/2" LITEBIT.		
				2" CSTC		
				SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

2.

CENTURY WEST ENGINEERING

TRENCH NO.	LOCATION SINCLAIR 8'N ℄, 110' E 4th	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U
4				SURFACE		
				3" ACP		
				4" CSTC		
				SILT		

TRENCH NO.	LOCATION 3rd 6' E ℄, 80' N LOGAN	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C
5				SURFACE		
				2½" ACP		
				2" CSTC		
				SILT		

TRENCH NO.	LOCATION MORGAN 5' S. ℄, 90' E. 2ND	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
				SURFACE		
				2½" LITEBIT		
6				SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

CENTURY W

TRENCH NO.	LOCATION JEFFERSON 5' N ℄, 130' W. NICHOLS	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U
7				SURFACE		
				1" LITEBIT		
				1" LITEBIT		
				2" CSTC		
				SILT		

TRENCH NO.	LOCATION 7th 6' E. ℄, 120' S. MAIN	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.
8				SURFACE		
				3" ACP		
				4" CSTC		
				SILT		

TRENCH NO.	LOCATION JEFFERSON 9' N ℄, 120' E 8th	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
9				SURFACE		
				3" ACP		
				4" CSTC		
				SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

2.

CENTURY WEST ENGINEERING

TRENCH NO.	LOCATION JEFFERSON 5'N.℄, 65'E. 11th	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U
10				SURFACE 3½" ACP SILT		

TRENCH NO.	LOCATION MAIN 9'N.℄, 130'E. 10th	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C
11				SURFACE 2½" ACP 1½" LITEBIT SILT		

TRENCH NO.	LOCATION MAIN 6'N.℄, 125'E. 13th	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
12				SURFACE 3½" ACP SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

CENTURY WEST ENGINEERING

TRENCH NO.	LOCATION 13th 4' E. ℄, 70' N. MARSHALL	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	
13				SURFACE 3" ACP SILT		

TRENCH NO.	LOCATION 10th 5' E. ℄, 35' N - MARSHALL	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.
14				SURFACE 1" LITEBIT SILT		

TRENCH NO.	LOCATION 7th 4' E. ℄, 30' N. MARSHALL	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.
15				SURFACE 2" ACP SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL
2.

CENTURY WEST ENGINEERING

TRENCH NO.	LOCATION 6th 5' W. ℄, 30' N. PARK	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.
16				SURFACE		
				3 1/2" LITEBIT		
				SILT		

TRENCH NO.	LOCATION PARK 6' S. ℄, 110' W. HARKER	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.
17				SURFACE		
				2 3/4" ACP		
				1 1/2" LITEBIT		
				SILT		

TRENCH NO.	LOCATION NICHOLS 5' E. ℄, 40' N. MARSHALL	ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
18				SURFACE		
				2" LITEBIT		
				SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

2.

CENTURY WEST ENGINEERING

TRENCH NO. LOCATION 5th 6' E. ℄, 20' N. MERRIAM ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT
19				SURFACE 2" ACP SILT	

TRENCH NO. LOCATION WHEATLAND 4' E. ℄, 250' N. LINCOLN ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C
20				SURFACE 1" LITEBIT 1" CSTC SILT		

TRENCH NO. LOCATION ROSS 6' S. ℄, 75' W. 4th ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
21				SURFACE 1" LITEBIT 1/2" LITEBIT 1" CSTC SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

2.

CENTURY WEST ENGINEERING

TRENCH NO. LOCATION LOGAN 4' N ℄, 50' W. 5TH ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U
22				SURFACE		
				2½" ACP		
				2" CSTC		
				SILT		

TRENCH NO. LOCATION 8TH 3' W. ℄, 25' S. MERRIAM ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.
				SURFACE		
				1½" LITEBIT		
23				SILT		

TRENCH NO. LOCATION 8TH 6' W. ℄, 50' N. WASHINGTON ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
				SURFACE		
				3" ACP		
24				2" CSTC		
				SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

CENTURY W

TRENCH NO. LOCATION 6th 5' E. ℄, 100' N. MAIN ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.
25				SURFACE 1½" LITEBIT 1" CSTC SILT		

TRENCH NO. LOCATION MAIN 5' S. ℄, 125' W. 1st ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.
26				SURFACE 1" LITEBIT 2" CSTC SILT		

TRENCH NO. LOCATION 4th 5' E. ℄, 75' N. ADAMS ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
27				SURFACE 1½" LITEBIT SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

2.

CENTURY WEST ENGINEERING

TRENCH NO. LOCATION 5th 5' E. ℄, 70' N. WASHINGTON ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U
28				SURFACE 1" LITE BIT SILT		

TRENCH NO. LOCATION MAIN 8' N. ℄, 150' W. 6th ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C
29				SURFACE 2½" ACP 2" CSTC SILT		

TRENCH NO. LOCATION MERRIAM 7' S. ℄, 60' E. 8th ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
30				SURFACE 1" LITE BIT SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

2.

CENTURY WEST ENGINEERING

TRENCH NO. LOCATION HARKER 6' W. ℄, 30' N. PARK ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U...
				SURFACE		
				3" ACP		
31				SILT		

TRENCH NO. LOCATION MAXWELL 5' S. ℄, 100' W. 5th ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
				SURFACE		
				2½" LITE BIT		
32				SILT		

TRENCH NO. LOCATION 5th 9' E ℄, 100' S. LOGAN ELEV.

SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C.S.
				SURFACE		
				2" LITE BIT		
33				SILT		

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL
2.
3. Trenches excavated B. CANNING C.W.E.

CENTURY WEST ENGINEERING

TRENCH NO.				LOCATION 8th 8' W. ℄, 90' S. SINCLAIR	ELEV.	
SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	
34				SURFACE 2" LITE BIT 2" LITE BIT SILT		

TRENCH NO.				LOCATION	ELEV.	
SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S

TRENCH NO.				LOCATION	ELEV.	
SAMPLE NO.	MOIST. %	DENS. (pcf)	GRAPHIC REPRESENTATION	DESCRIPTION	GEOLOGIC UNIT	U.S.C

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC BORING LOCATION & AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS & TIMES.

1. Excavations made with CORE DRILL

2.

CENTURY WEST ENGINEERING

APPENDIX E

GRAVEL ROAD CONDITION RATINGS

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

Adjusted Gravel Road Condition Ratings

Street							Pictures
1st – Park to Merriam	D	=	25	ADT	=	3	1 – 5
	R	=	25	ECON	=	3	
	T	=	3	TOTAL	=	59	
1st – Merriam to Marshall	D	=	15	ADT	=	3	6 – 8
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	
2nd – Adams to Jefferson	D	=	15	ADT	=	3	9 – 11
	R	=	15	ECON	=	3	
	T	=	10	TOTAL	=	46	
2nd – Merriam to Park	D	=	25	ADT	=	3	12 – 14
	R	=	20	ECON	=	9	
	T	=	3	TOTAL	=	60	
2nd – Sinclair to Ross (No Road Present)							15
3rd – Fitness Lane to Gibson	D	=	20	ADT	=	3	16 – 18
	R	=	20	ECON	=	3	
	T	=	3	TOTAL	=	49	
4th – Fitness Lane to Gibson	D	=	15	ADT	=	3	19 – 21
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	
4th –Fitness Lane north to R/R Tracks	D	=	15	ADT	=	3	22 – 27
	R	=	15	ECON	=	9	
	T	=	5	TOTAL	=	47	
4th – R/R Tracks north to Jefferson	D	=	20	ADT	=	3	28 – 30
	R	=	20	ECON	=	9	
	T	=	5	TOTAL	=	57	
8th – Fitness Lane to Gibson	D	=	20	ADT	=	3	31 – 34
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	44	
9th – Logan to Sinclair	D	=	25	ADT	=	3	35
	R	=	30	ECON	=	3	
	T	=	30	TOTAL	=	64	
9th – Morgan Street North	D	=	20	ADT	=	3	36
	R	=	15	ECON	=	9	
	T	=	3	TOTAL	=	50	
10th – Morgan to Jefferson	D	=	25	ADT	=	3	37 – 41
	R	=	25	ECON	=	3	
	T	=	5	TOTAL	=	61	
10th – Morgan north to dead end	D	=	15	ADT	=	3	42
	R	=	15	ECON	=	9	
	T	=	3	TOTAL	=	45	

Adjusted Gravel Road Condition Ratings

10th – Sinclair south to dead end	D	=	0	ADT	=	3	43
	R	=	0	ECON	=	3	
	T	=	3	TOTAL	=	9	
11th – Ross north to dead end	D	=	15	ADT	=	3	44
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	
12th – Sinclair to Logan	D	=	15	ADT	=	3	45 – 47
	R	=	15	ECON	=	3	
	T	=	5	TOTAL	=	41	
13th – Sinclair north to Ross	D	=	15	ADT	=	3	48
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	
13th – Sinclair to Logan	D	=	0	ADT	=	6	49 – 51
	R	=	15	ECON	=	9	
	T	=	3	TOTAL	=	33	
13th – Logan to Morgan	D	=	0	ADT	=	6	52 – 54
	R	=	15	ECON	=	9	
	T	=	10	TOTAL	=	40	
14th – Morgan to Logan	D	=	0	ADT	=	9	55 – 57
	R	=	15	ECON	=	9	
	T	=	10	TOTAL	=	43	
14th – Logan to Sinclair	D	=	15	ADT	=	3	58 – 60
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	
14th – Sinclair to Ross	D	=	15	ADT	=	3	61 – 63
	R	=	20	ECON	=	3	
	T	=	3	TOTAL	=	44	
15th – Ross to Sinclair	D	=	0	ADT	=	3	64 – 66
	R	=	0	ECON	=	3	
	T	=	3	TOTAL	=	9	
15th – Sinclair to Morgan *(Field Only)*							
Ross – Gunning to 15th	D	=	0	ADT	=	3	67 – 68
	R	=	0	ECON	=	3	
	T	=	3	TOTAL	=	9	
Ross – 15th to 14th	D	=	20	ADT	=	3	69 – 71
	R	=	25	ECON	=	3	
	T	=	3	TOTAL	=	54	
Ross – Nichols to 3rd	D	=	20	ADT	=	9	72 – 74
	R	=	15	ECON	=	9	
	T	=	8	TOTAL	=	61	
Sinclair – 12th to 13th	D	=	15	ADT	=	3	75 – 77
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	

Adjusted Gravel Road Condition Ratings

Sinclair – 13th to 14th	D	=	20	ADT	=	3	78 – 80
	R	=	20	ECON	=	9	
	T	=	3	TOTAL	=	55	
Sinclair – 14th to 15th	D	=	0	ADT	=	3	81 – 83
	R	=	0	ECON	=	3	
	T	=	3	TOTAL	=	9	
Sinclair – 15th to Gunning Road	D	=	0	ADT	=	3	84 – 85
	R	=	0	ECON	=	3	
	T	=	3	TOTAL	=	9	
Logan – 14th to 15th *(Field Only)*							86
Logan – 14th to 13th	D	=	25	ADT	=	3	87 – 89
	R	=	20	ECON	=	9	
	T	=	4	TOTAL	=	61	
Logan – 13th to 12th	D	=	20	ADT	=	6	90 – 92
	R	=	20	ECON	=	9	
	T	=	5	TOTAL	=	60	
Logan – 12th to 11th	D	=	15	ADT	=	3	93 – 95
	R	=	15	ECON	=	9	
	T	=	4	TOTAL	=	46	
Logan – 9th to 8th	D	=	20	ADT	=	3	96 – 98
	R	=	25	ECON	=	3	
	T	=	3	TOTAL	=	54	
Logan – 1st east to dead end	D	=	15	ADT	=	3	99
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	
Morgan – east edge of Town to 1st	D	=	15	ADT	=	3	100 – 103
	R	=	20	ECON	=	3	
	T	=	5	TOTAL	=	46	
Morgan – 14th to Gunning Road	D	=	15	ADT	=	3	104 – 107
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	
Park – 14th to 13th	D	=	25	ADT	=	3	108 – 111
	R	=	25	ECON	=	9	
	T	=	3	TOTAL	=	65	
Park – 9th to 8th *(Not Maintained in Winter)*							112
Park – 2nd to 1st	D	=	0	ADT	=	3	113 – 114
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	24	
Merriam – 1st east to dead end	D	=	25	ADT	=	3	115 – 116
	R	=	20	ECON	=	3	
	T	=	3	TOTAL	=	54	

Adjusted Gravel Road Condition Ratings

Merriam – 2nd to 3rd	D	=	25	ADT	=	3	117 – 119
	R	=	20	ECON	=	9	
	T	=	3	TOTAL	=	60	
Merriam – Nichols to 3rd	D	=	15	ADT	=	3	120 – 121
	R	=	0	ECON	=	3	
	T	=	4	TOTAL	=	25	
Marshall – 1st east to dead end	D	=	25	ADT	=	3	122 – 123
	R	=	20	ECON	=	3	
	T	=	3	TOTAL	=	54	
Maxwell – 1st east to dead end	D	=	20	ADT	=	3	124 – 125
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	44	
Main – 1st east to dead end	D	=	15	ADT	=	3	126 – 127
	R	=	15	ECON	=	3	
	T	=	3	TOTAL	=	39	
Jefferson – 3rd to 2nd	D	=	25	ADT	=	3	128
	R	=	20	ECON	=	3	
	T	=	3	TOTAL	=	54	
Monroe – 14th (west dead end) to 12th	D	=	20	ADT	=	6	129 – 134
	R	=	15	ECON	=	9	
	T	=	5	TOTAL	=	55	
Jackson – 8th west to dead end	D	=	15	ADT	=	3	135 – 136
	R	=	0	ECON	=	9	
	T	=	3	TOTAL	=	30	
Madison – 8th to 7th	D	=	20	ADT	=	6	137 – 139
	R	=	20	ECON	=	9	
	T	=	3	TOTAL	=	58	
Madison – 7th to 5th	D	=	25	ADT	=	6	140 – 144
	R	=	25	ECON	=	9	
	T	=	5	TOTAL	=	70	
Madison – 5th to 4th	D	=	25	ADT	=	6	145 – 147
	R	=	25	ECON	=	9	
	T	=	5	TOTAL	=	70	
Madison – 4th to 3rd	D	=	25	ADT	=	6	148 – 152
	R	=	25	ECON	=	9	
	T	=	5	TOTAL	=	70	

Gravel Road Rating System

DRAINAGE	
0	Catch basin / drywells – no ponding present
15	Catch basin / drywells – present but not completely effective Good v-ditches, minor ponding or water present
20	No drywells V-ditches in poor condition or road slope provides some drainage Ponding and/or sheet flow present
25	No drainage structures present Road slope and orientation provides some drainage Large ponds or significant standing water
30	No drainage, road is the low point of the surrounding area Severe ponding that covers large portions of road

ROAD CONDITION	
0	Proper crown, plenty of rock, no potholes or washboard
15	Adequate crown, plenty of rock, minor potholes or washboard
20	Flat road surface with sufficient rock Significant potholes and/or washboard
25	Flat or sunken road surface with very little rock present Major potholes and road damage present
30	Sunken road surface, no rock present, severe potholes Road is hardly passable

TRAFFIC GENERATOR ROUTE	
10	Truck Route
10	School Bus Route
8	Hospital
8	Public Building
5	Large Business
	Small Business
4	Multi-family Unit
3	Park
3	Church
3	Local Access
60	**Total Possible Points**
13	**Minimum Points Possible**

ADT	
9	< 500
6	200 - 499
3	1 -199

ECONOMIC IMPACTS	
9	Existing Business/Development Need
6	Secured New Business/Development
3	Potential New Business/Development

APPENDIX F

ASPHALT ROAD CONDITION RATINGS

CENTURY WEST
ENGINEERING CORPORATION

LEADING THROUGH EFFECTIVE SOLUTIONS

Asphalt Road Condition Ratings

Street						
1st St. Sinclair to Ross	PCR	=	0	ECON	=	3
	T	=	4	FUND	=	0
	ADT	=	3	TOTAL	=	10
1st St. Sinclair to Logan	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
1st St. Logan to SR	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
1st St. Morgan to Park	PCR	=	60	ECON	=	3
	T	=	10	FUND	=	12
	ADT	=	3	TOTAL	=	88
1st St. Marshall to Maxwell	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
1st St. Maxwell to Main	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
1st St. Main to Washington	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
1st St. Washington to Adams	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
2nd St. Sinclair to Logan	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
2nd St. Logan to Morgan	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	59
2nd St. Morgan to Park	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
2nd St. Marshall to Maxwell	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	59
2nd St. Maxwell to Main	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59

Asphalt Road Condition Ratings

2nd St. Main to Washington	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
2nd St. Washington to Adams	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
3rd St. Ross to Sinclair	PCR	=	0	ECON	=	9
	T	=	8	FUND	=	12
	ADT	=	6	TOTAL	=	35
3rd St. Sinclair to Logan	PCR	=	50	ECON	=	9
	T	=	8	FUND	=	12
	ADT	=	6	TOTAL	=	85
3rd St. Logan to Morgan	PCR	=	50	ECON	=	9
	T	=	8	FUND	=	12
	ADT	=	6	TOTAL	=	85
3rd St. Morgan to Park	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
3rd St. Park to Merriam	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
3rd St. Merriam to Marshall	PCR	=	50	ECON	=	6
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	62
3rd St. Marshall to Maxwell	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
3rd St. Maxwell to Main	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
3rd St. Main to Washington	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
3rd St. Washington to Adams	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
3rd St. Adams to Jefferson	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
3rd St. Jefferson to Fitness Lane	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12

Asphalt Road Condition Ratings

Nichols – Ross to Sinclair	PCR	=	50	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	6	TOTAL	=	67
Nichols – Sinclair to Logan	PCR	=	50	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	6	TOTAL	=	67
Nichols – Park to Merriam	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Nichols – Merriam to Marshall	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	69
Nichols -Marshall to Maxwell	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Nichols – Maxwell to Main	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Nichols – Main to Washington	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Nichols – Washington to Adams	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Nichols – Adams to Jefferson	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
4th St. Ross to Sinclair	PCR	=	50	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	6	TOTAL	=	67
4th St. Sinclair to Logan	PCR	=	55	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	6	TOTAL	=	72
4th St. Logan to Morgan	PCR	=	0	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	6	TOTAL	=	17
Spring St. – 5th St. to Nichols	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16

Asphalt Road Condition Ratings

4th St. – Merriam to Marshall	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
4th St. – Marshall to Maxwell	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
4th St. – Maxwell to Main	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
4th St. – Main to Washington	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
4th St. – Washington to Adams	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
4th St. – Adams to Jefferson	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
5th St. – Ross to Sinclair	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
5th St. – Sinclair to Logan	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
5th St. – Logan to Morgan	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
Harker St. – Morgan to Park	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Harker St. – Park to Merriam	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
5th St. – Merriam to Marshall	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
5th St. – Marshall to Maxwell	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22

Asphalt Road Condition Ratings

5th St. Maxwell to Main	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	9	TOTAL	=	15
5th St. Main to Washington	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	9	TOTAL	=	15
5th St. Washington to Adams	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	9	TOTAL	=	15
5th St. Adams to Jefferson	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
6th St. Lincoln to Ross	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
6th St. Ross to Sinclair	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
6th St. Sinclair to Logan	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
6th St. Logan to Morgan	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
6th St. Morgan to Park	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
6th St. Park to Merriam	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
6th St. Merriam to Marshall	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
6th St. Marshall to Maxwell	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
6th St. Maxwell to Main	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	9	TOTAL	=	15

Asphalt Road Condition Ratings

6th St. - Main to Washington	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	9	TOTAL	=	15
7th St. – Ross to Sinclair	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
7th St. – Sinclair to Logan	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
7th St. – Logan to Morgan	PCR	=	0	ECON	=	5
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	18
7th St. – Morgan to Park	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
7th St. – Park to Merriam	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
7th St. – Merriam to Marshall	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
7th St. – Marshall to Maxwell	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
7th St. – Maxwell to Main	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
7th St. – Main to Washington	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
7th St. – Washington to Adams	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
7th St. – Adams to Jefferson	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
7th St. – Jefferson to Madison	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16

Asphalt Road Condition Ratings

8th St. – Ross to Sinclair	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
8th St. – Sinclair to Logan	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
8th St. – Logan to Morgan	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
8th St. – Morgan to Park	PCR	=	0	ECON	=	3
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	14
8th St. – Park to Merriam	PCR	=	0	ECON	=	5
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	14
8th St. – Merriam to Marshall	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
8th St. – Marshall to Maxwell	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
8th St. – Maxwell to Main	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
8th St. – Main to Washington	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
8th St. – Washington to Adams	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
8th St. – Adams to Jefferson	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	62
8th St. – Jefferson to Madison	PCR	=	0	ECON	=	9
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	20
8th St. – Madison to Monroe	PCR	=	0	ECON	=	9
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	20

Asphalt Road Condition Ratings

8th St. – Monroe to Fitness Lane	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
9th St. – Lincoln to Ross	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
9th St. – Ross to Sinclair	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
9th St. – Morgan to Park	PCR	=	50	ECON	=	3
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	64
9th St. – Park to Merriam	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
9th St. – Merriam to Marshall	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
9th St. – Marshall to Maxwell	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
9th St. – Maxwell to Main	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
9th St. – Main to Washington	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
9th St. – Washington to Adams	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
9th St. – Adams to Jefferson	PCR	=	60	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	69
10th St. – Ross to Sinclair	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
10th St. – Morgan to Park	PCR	=	60	ECON	=	9
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	80

Asphalt Road Condition Ratings

10th St. – Park to Merriam	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
10th St. – Merriam to Marshall	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
10th St. – Marshall to Maxwell	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
10th St. – Maxwell to Main	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
10th St. – Main to Washington	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
10th St. – Washington to Adams	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
10th St. – Adams to Jefferson	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
10th St. – Jefferson to Madison	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
11th St. – Ross to Sinclair	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
11th St. – Logan to Morgan	PCR	=	0	ECON	=	3
	T	=	5	FUND	=	0
	ADT	=	3	TOTAL	=	11
11th St. – Morgan to Park	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
11th St. – Park to Merriam	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
11th St. – Merriam to Marshall	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59

Asphalt Road Condition Ratings

11th St. – Marshall to Maxwell	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
11th St. – Maxwell to Main	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
11th St. – Main to Washington	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
11th St. – Washington to Adams	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
11th St. – Adams to Jefferson	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
13th St. – Morgan to Park	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
13th St. – Park to Merriam	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
13th St. – Merriam to Marshall	PCR	=	55	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	71
13th St. – Marshall to Maxwell	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
13th St. – Maxwell to Main	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
13th St. – Main to Washington	PCR	=	55	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	71
13th St. – Washington to Adams	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
13th St. – Adams to Jefferson	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66

Asphalt Road Condition Ratings

14th St. – Morgan to Park	PCR	=	50	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	3	TOTAL	=	64
14th St. – Park to Merriam	PCR	=	50	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	3	TOTAL	=	64
Ross – 11th St. to 10th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Ross – 10th St. to 9th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Ross – 9th St. to 8th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Ross – 8th St. to 7th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Lincoln – 9th St. to 8th St.	PCR	=	60	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	72
Ross – 7th St. to 6th St.	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
Ross – 6thSt. to 5th St.	PCR	=	50	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	3	TOTAL	=	64
Ross – 5th St. to 4th St.	PCR	=	0	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	6	TOTAL	=	17
Sinclair – 11th St. to 10th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Sinclair – 10th St. to 9th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Sinclair – 9th St. to 8th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9

Asphalt Road Condition Ratings

Sinclair – 8th St. to 7th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Sinclair – 7th St. to 6th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Sinclair – 6th St. to 5th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Sinclair – 5th St. to 4th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Sinclair – 4th St. to Nichols	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Sinclair – Nichols to 3rd St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Sinclair – 3rd St. to 2nd St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Sinclair – 2nd St. to 1st St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Sinclair – 1st St. to SR25	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Logan – 8th St. to 7th St.	PCR	=	60	ECON	=	3
	T	=	10	FUND	=	12
	ADT	=	3	TOTAL	=	88
Logan – 7th St. to 6th St.	PCR	=	55	ECON	=	3
	T	=	10	FUND	=	12
	ADT	=	6	TOTAL	=	86
Logan - 6th St. to 5th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Logan - 4th St. to Nichols	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9

Asphalt Road Condition Ratings

Logan – 5th St. to 4th St.	PCR	=	50	ECON	=	3
	T	=	8	FUND	=	0
	ADT	=	6	TOTAL	=	67
Logan – Nichols to 3rd St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Logan – 3rd St. to 2nd St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Logan – 2nd St. to 1st St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Morgan – 14th St. to 13th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Morgan – 3rd St. to 2nd St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Morgan – 2nd St. to 1St St.	PCR	=	55	ECON	=	3
	T	=	10	FUND	=	12
	ADT	=	3	TOTAL	=	78
Park – 12th St. to 11th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Park – 11th St. to 10th St.	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Park – 10th St. to 9th St.	PCR	=	0	ECON	=	3
	T	=	5	FUND	=	0
	ADT	=	3	TOTAL	=	11
Park – 7th St. to 9th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Park – 6th to Harker	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Park – 3rd St. to 2nd St.	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66

Asphalt Road Condition Ratings

Merriam – 14th St. to 13th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Merriam - 13th St. to 12th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Merriam - 12th St. to 11th St.	PCR	=	60	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	69
Merriam - 11th St. to 10th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Merriam - 10th St. to 9th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Merriam - 9th St. to 8th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Merriam - 8th St. to 7th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Merriam - 7th St. to 6th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	62
Merriam - 6th St. to 5th St.	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	64
Merriam - 5th St. to 4th St.	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	67
Merriam - 4th St. to Nichols	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Marshall – 13th St. to 12th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Marshall – 12th St. to 11th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	71

Asphalt Road Condition Ratings

Marshall – 11th St. to 10th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	71
Marshall – 10th St. to 9th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	71
Marshall – 9th St. to 8th St.	PCR	=	60	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	81
Marshall – 8th St. to 7th St.	PCR	=	60	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	81
Marshall – 6th St. to 5th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
Marshall – 5th St. to 4th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Marshall – 4th St. to Nichols	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Marshall – Nichols to 3rd St.	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
Marshall – 3rd St. to 2nd St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Marshall – 2nd St. to 1st St.	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Maxwell – City Limits (West) to 15th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Maxwell – 14th St. to 13th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Maxwell – 13th St. to 12th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59

Asphalt Road Condition Ratings

Maxwell – 12th St. to 11th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	71
Maxwell – 11th St. to 10th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	71
Maxwell – 10th St. to 9th St.	PCR	=	60	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	81
Maxwell – 9th St. to 8th St.	PCR	=	60	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	81
Maxwell – 8th St. to 7th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	12
	ADT	=	3	TOTAL	=	71
Maxwell – 7th St. to 6th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
Maxwell – 6th St. to 5th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	9	TOTAL	=	22
Maxwell – 5th St. to 4th St.	PCR	=	60	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	69
Maxwell – 4th St. to Nichols	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Maxwell – Nichols to 3rd St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Maxwell -3rd St. to 2nd St.	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Maxwell – 2nd St. to 1st St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Main – 15th St. to 13th St.	PCR	=	50	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66

Asphalt Road Condition Ratings

Main – 13th St. to 12th St.	PCR	=	55	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	66
Main – 12th St. to 11th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Main – 11th St. to 10th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Main – 10th St. to 9th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Main – 9th St. to 8th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Main – 8th St. to 7th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Main – 7th St. to 6th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Main – 6th St. to 5th St.	PCR	=	0	ECON	=	6
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Main – 5th St. to 4th st.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Main – 4th St. to Nichols	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Main – Nichols to 3rd St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Main – 3rd St. to 2nd St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Main – 2nd St. to 1st St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9

Asphalt Road Condition Ratings

Main – 1st St. to (East) City Limits	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Washington – 14th St. to 13th St.	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Washington – 13th St. to 12th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Washington – 12th St. to 11th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
Washington – 11th St. to 10th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
Washington – 10th St. to 9th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
Washington – 9th St. to 8th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
Washington – 8th St. to 7th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	62
Washington – 7th St. to 6th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	12
Washington – 6th St. to 5th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	6	TOTAL	=	62
Washington – 5th St. to 4th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Washington – 4th St. to Nichols	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Washington – Nichols to 3rd St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59

Asphalt Road Condition Ratings

Washington – 3rd St. to 2nd St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Washington – 2nd St. to 1st St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Adams – 14th St. to 13th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Adams - 13th St. to 12th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Adams - 12th St. to 11th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Adams - 11th St. to 10th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Adams - 10th St. to 9th St.	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Adams - 9th St. to 8th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Adams - 8th St. to 7th St.	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Adams - 5th St. to 4th St.	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Adams - 4th St. to Nichols	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Adams – Nichols to 3rd St	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
Adams – 2nd St. to 1st St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9

Asphalt Road Condition Ratings

Jefferson – 14th St. to 13th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9
Jefferson – 13th St. to 12th St.	PCR	=	55	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	64
Jefferson – 12th St. to 11th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Jefferson -11th St. to 10th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Jefferson – 10th St. to 9th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Jefferson – 9th St. to 8th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Jefferson -8th St. to 7th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	6	TOTAL	=	19
Jefferson – 5th St. to 4th St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Jefferson – 4th St. to Nichols	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Jefferson – Nichols t 3rd St.	PCR	=	0	ECON	=	3
	T	=	10	FUND	=	0
	ADT	=	3	TOTAL	=	16
Monroe – 12th St. to 11th St.	PCR	=	0	ECON	=	3
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	14
Monroe – 11th St. to 10th St.	PCR	=	0	ECON	=	3
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	14
Monroe – 10th St. to 9th St.	PCR	=	0	ECON	=	3
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	14

Asphalt Road Condition Ratings

Monroe – 9th St. to 8th St.	PCR	=	0	ECON	=	3
	T	=	5	FUND	=	0
	ADT	=	6	TOTAL	=	14
Fitness Lane – SR28 to 8th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	9	TOTAL	=	15
Fitness Lane – 8th St. to 4th St.	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	9	TOTAL	=	15
Fitness Lane – 4th to (East) City Limits	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	9	TOTAL	=	15
15th – Maxwell to Main	PCR	=	50	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	59
14th – Marshall to Main	PCR	=	0	ECON	=	3
	T	=	3	FUND	=	0
	ADT	=	3	TOTAL	=	9

Asphalt Road Rating System

60 pts. Max	PCR
60	0 – 24
55	25 – 49
50	50 – 74
0	75 – 100

10 pts. Max	TRAFFIC GENERATOR ROUTE
10	Truck Route
10	School Bus Route
8	Hospital
8	Public Building
5	Large Business
3	Small Business
4	Multi-family Unit
3	Park
3	Church
3	Local Access

9 pts. Max	ADT
9	< 500
6	200 - 499
3	1 -199

9 pts. Max	ECONOMIC IMPACTS
9	Existing Business/Development Need
6	Secured New Business/Development
3	Potential New Business/Development

12 pts. Max	FUNDING
12	100 – 80% Non-City Funds
9	80 – 50% Non-City Funds
6	50 – 30% Non-City Funds
3	30 – 10% Non-City Funds
0	<10% Non-City Funds