2017 Pavement Management Plan

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GENESIS
FROM VISION TO REALITY

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I. INTRODUCTION

Genesis began working closely with City staff to develop a Pavement Management Program (PMP) in the spring of 2016. The methodology for the PMP was initially utilizing ITE trip generation rates. This resulted in a plan that was somewhat complex to understand and implement. During the August 23, 2016 City Council meeting, Council recommended that a Citizens Advisory Committee (CAC) be formed to assist with the refinement of the PMP methodology. This committee met five (5) times between January and April 2017 to discuss the procedures that the City had previously utilized for the PMPs. The CAC also analyzed the draft recommendations regarding the proposed PMP. The following report is a product of this collaborative effort. Genesis would like to acknowledge these citizens who contributed their time to improve this proposed plan:

Citizens
- Peter Altman
- Michael Beam
- Ronald Capalongo
- Heather Fiorentino
- John Gallagher
- Steve Halkias
- Anderson Hatcher
- Lois Robinson

City Staff
- Robert Rivera
- Crystal Feast
- Barret Doe

II. REPORT OBJECTIVE

This Pavement Management Plan Assessment Report details the basis of the benefit allocation and assessment methodology to support the implementation of a Pavement Management Plan (PMP), consisting of a continuous process for maintaining the city streets. The City has identified Street Paving Improvements in the City's Street Improvement Fund within its five-year Capital Improvement Plan. Those lands within the Assessment Area of the City of New Port Richey (City) are generally described as properties which are currently included, or may in the future be included, within the corporate boundaries of the City. The objective of this Report is to:

1. The City, through its Capital Improvement Program (CIP), has established a goal for a continuous program that will preserve the City's investment in its existing paved streets and other functioning rights-of-way. The program will be deployed in an annual manner through an ongoing program of resurfacing and improvements appropriate for the sustainability of the transportation system within

the City that is owned and/or maintained by the City of New Port Richey. An annual budget will be recommended.

2. Review the methodology utilized for previous street improvement project assessments to establish historical context for proposed assessment methodology.
3. Establish a methodology of allocating the associated costs to the benefiting properties within the Citywide Assessment Area and ultimately to the individual real property parcels.
4. Calculate and recommend the appropriate assessment fee that can be recorded on an annual non-ad valorem assessment on assessable lands within the City.
5. Create a recommendation of an appropriate credit for property owners who have been assessed for prior street improvement projects.

III. PAVEMENT MANAGEMENT PLAN

The basis of benefits received by properties within the City relates directly to the findings of the Roadway Needs Assessment Report (Engineer's Report), prepared by Genesis and issued in December of 2014. The Introduction section of the report (attached as Appendix A) states at the outset that "High quality transportation systems are essential to a thriving community". The report identified the general condition of approximately 70 miles of paved roadways that are owned and maintained by the City. The methodology employed was based on the Pavement Surface Evaluation and Rating (PASER) system developed by the Transportation Information System of the University of Wisconsin - Madison. The PASER system focuses on the surface condition of roads using photographic standards as benchmarks for a ten-point evaluation scale. The prevailing logic of Pavement Management (Street Paving Improvement) is to restore road surfaces before the ride quality drops below a quality rating of "good" to reap the benefits of a consistently high-quality pavement condition. The benefit resulting from the increased scheduling of periodic pavement restoration includes vehicle ride quality, but also to avoid the rapid decline that occurs when the condition of the roadway surface begins to drop from good to fair. This rating reduction results in a high corresponding increase in cost of rehabilitation maintenance (which can add up to 10 times the cost of preventative maintenance).

The engineer's report identified the initial five (5) phases or cycles of capital improvements to be completed over a five-year period (which includes only a portion of the City's total street network). As coordinated with staff, each phase was limited to a $1,000,000 construction budget. The engineer's opinion of probable construction cost was based on 2014 material pricing and included both pavement overlay (refurbish road

surfaces) and milling/paving (cases where multiple layers have accumulated to an excess thickness, or patching and other defects exist).

Subsequent to completion of the engineer's report, Genesis and City staff took a historical look at roadway maintenance and learned that 12 roadway restoration projects have been completed during the last 30 years. Since the generally accepted industry standard average life span of a paved roadway is 20 years, it appears that the City's roadway network has a considerable amount of 'deferred maintenance'. Genesis and City staff have developed a Pavement Management Plan (PMP) that is designed to complete a maintenance cycle of all City maintained roadways within 20 years. An allocation of approximately $1,700,000 (2017 dollars) is a reasonable estimate of the cost to implement a surface replacement program (the program) using a 20-year life cycle.

A maintained road network provides two distinct types of benefits to the property owners within the City. The first benefit is the positive effect that a well-maintained road system has on the value of all real estate parcels that exist within the City. The second benefit of a well-maintained road system is in the actual provision of satisfactory trips that occur as a result of the active use of the system by the various types of real properties within the City. Well maintained roadways provide safer travel and reduced vehicle maintenance costs for users. The existence of a well paved road network improves the value of all properties within the City irrespective of the frequency of use of the property whether vacant or fully developed. All property owners within the City will have the ability to utilize and benefit from the streets and multi-modal corridors developed, constructed, and maintained by the City.

A report issued in 2013 by IMS Infrastructure Management Services for the City of Dunwoody, GA addressed the importance and purpose of pavement management systems as follows;

> *Agencies implement pavement management systems for a variety of reasons:*
>
> - *The agency desires to use analytical tools and technologies to more effectively manage their assets. This need often comes to the forefront due to rapidly increased costs and rapidly deteriorating pavements.*
> - *In some cases, a pavement management system is required in order to qualify for various types of funding.*

- *The Governmental Accounting Standards Board (GASB) Statement 34 now requires agencies that collect taxes for the purpose of managing a long-term, fixed infrastructure asset to either:*
  - *(Standard Method) - Implement financial-accounting controls to effectively depreciate and plan for replacement of fixed assets, or*
  - *(Modified Method) - Implement an asset management system that provides a mechanism to gauge and budget for the long-term rehabilitation/ maintenance of an asset.*

The study may be used as the basis for achieving the City's GASB 34 compliance. In the case of the *Standard Method*, this study may be used as the basis for the inventory and valuation of the roadway network. For the *Modified Method*, once implemented the study recommendations may form the core of the GASB 34 compliance.

The City's CIP will establish the Pavement Management Plan schedule for maintenance of the public transportation infrastructure that will be deployed systematically within the assessment area. Issuing of bonds or utilizing indebtedness as a mechanism to accelerate the maintenance is generally discouraged since the current Local Option Gas Tax (LOGT) distribution formula rewards municipalities that have reoccurring, consistent roadway maintenance programs. Every year that the maintenance is accelerated will result in a year with diminished LOGT funds at the end of the pavement lifespan. Interest paid for the benefit of the acceleration will likely result in less capital to be invested to the roads. The assessments will provide the financial support required for the City to perform a pavement management program that will result in improved driving surfaces and provide for the periodic pavement restoration of all streets and improved transportation corridors controlled by the City.

The CIP should direct staff to schedule roadways for maintenance in the most efficient manner possible while prioritizing streets whose condition has dropped below a good rating. Since Arterial/Collector (A/C) streets are critical to providing efficient commerce, emergency services, and municipal services, the A/C should have a priority status.

IV. HISTORICAL CITY PAVEMENT MANAGEMENT PLAN OVERVIEW

The City, it appears, has historically maintained its residential streets by completing projects using funding from a combination of sources. Accumulated funds collected from multiple years' Gas Tax proceeds have been combined with collections from special assessments which have been applied to the benefiting properties located adjacent to the street being improved at various levels and different methodologies. The 2009 Street Assessment Project used a calculation of three (3) assessment amounts. Property owners were classified into three classifications, Single-Family Home (SFH), Commercial/Multi-Family (CMF), and a Special Streets/Arterial/Collector Streets Class (SS/AC). The total cost for the project was divided by the number of properties associated with the SFH, CMF, and SS/AC classes resulting in the total dollar amount for each assessment per property. The City's Board of Equalization then approved funding contributions by the City for each class based on a percentage. SFH class had a 65% contribution by the City and a 35% cost share by the property owner. The CMF class had a 35% contribution by the City and a 65% cost share by the property owner. The SS/AC class had a 75% contribution by the City and a 25% cost share by the (SFH) property owners while the (CMF) percentage remained at the 35% contribution by the City and 65% contribution by the property owner. Over the past 30 years, there have been 12 street paving projects. Most of these projects were funded utilizing some form of assessment of directly affected property owners. However, there have been exceptions, as streets that are considered arterial/collectors such as Main St., Madison St., Congress St., Gulf Dr., Plathe Rd., and most recently Circle Blvd. which were paved and funded at 100% by the City.

The most recent street paving projects, assessments were levied and liens recorded to the directly affected property owner, with payback terms of ten years including interest. The assessments were directly billed by the City. The construction costs of these paving projects were subsidized to various degrees by the City, and the balance of the costs borne by the immediately adjacent property owners. Those owners were assessed based on either road footage or classification. This direct benefit method has been problematic in two ways. First, the variance among property owners in the length of footage adjacent to the pavement installed often resulted in perceptions that the distribution of costs under that method was not equitable. Second, property owners share their public streets with other vehicles and some streets incur more through traffic and, as such, those streets deteriorate at a faster rate. While the City typically made adjustments for assessments on arterial/collector roads, the resulting net charges to property owners over the past 30 years lacked consistency. The use of limited resources to finance the street improvements and the cumbersome steps involved in advancing paving projects have resulted in a decline in the overall quality of the City's

street network. The need to establish a better process to preserve the transportation assets and provide a better quality of life was identified.

V. PROPOSED PAVEMENT MANAGEMENT PLAN

The Citizen's Advisory Committee (CAC) recommends that the following funds be committed to the pavement maintenance program annually to lower the non-ad valorem assessment required from benefiting properties:

- $425,000 (Local Option Gas Tax)
- $75,000 (Solid Waste Franchise Fees)
- $200,000 (Penny for Pasco (2))
- $200,000 (General Funds Transfer)

  $900,000

A reduced annual assessment will also serve to assure that the assessment amounts do not exceed the benefits received to individual properties within the City. Assessments will include local schools, state and county governmental, and public purpose facilities because they receive special benefits included in the proposed program. City facilities will not be charged as the City is contributing over 50% funding of the program.

Methodology (As Clarified by the City Attorney)

According to FS 170.02, the methodology by which valid special assessments are allocated to specifically benefited property must be determined and adopted by the governing body of the City. It seems that this authority alone gives the City the ability to determine how special assessments will be allocated to specifically benefited properties. The benefit and assessment allocation rationale recommended in this report is detailed below and provides a mechanism by which the costs, based on a determination of the estimated level of benefit conferred by the program, are apportioned to the assessable lands within the City for levy and collection. The recommended assessment allocation methodology was developed after several meetings with the Citizen's Advisory Committee (CAC) where specific elements of prior assessment

programs and proposed programs were evaluated. Reoccurring themes of the meetings included the recommendation that the final assessment allocation methodology should:

- not be overly burdensome to neighborhood businesses,
- consider the city as an interconnected network of streets,
- include every residential dwelling unit, and
- include consideration for parcels that are not contiguous to City maintained local roadways.

Property Owner Classifications

In response to the CAC's desire to 'simplify' the assessment methodology, each parcel within the Pasco County Property Appraiser's database is classified as either residential or non-residential. The residential land uses Department of Revenue (DOR) Codes 0, 1, 2, 3, 4, 8, and 28 are recommended to be assessed per individual dwelling unit. The non-residential land uses are proposed to be assessed on a per parcel basis with a distinction made based upon total buildings size.

- 0 – 4,999 sf building(s) [base non-residential rate]
- 5,000 – 9,999 sf building(s) [2X base non-residential rate]
- 10,000 – 24,999 sf building(s) [3X base non-residential rate]
- 25,000+ sf building(s) [4X base non-residential rate]

It should be noted that the assessments are determined using the Pasco County Property Appraiser's database. This database does not identify the quantity of dwelling units on mixed-use projects, so these projects are proposed to be assessed using the tiered total building square footage method described above. Likewise, developments that include multiple parcels of land will receive an assessment for each individual parcel of land based on the buildings reported on that parcel.

Parcels owned by the City of New Port Richey, as well as those that are exclusively ditches, wetlands, private right-of-way, etc. (DOR Codes 9, 91, 94, 95, and 96), were excluded from the dataset (A/C assessment list). (The Property Appraiser's NAL (DOR) Class Codes reference table is included in Appendix B.)

Arterial/Collector Roads

The recommended assessment allocation divides the City roadway network into two categories - 'Arterial/Collector Roads' and 'Local Roads'. Arterial/Collector (A/C) roads are generally higher volume roadways that connect to other A/C, County, or State roadways. They encourage 'through traffic,' generally have higher speeds, increased degree of access control, and frequently make-up 20-35% of the roadway network. These roadways are commonly used by residents to make longer trips and are vital to providing timely public services throughout the community (i.e., police, fire, medical, public works, etc.). Since every parcel relies on the A/C roadway network (Appendix C), each of the included parcels will be assessed based on its designated classification. The annual maintenance cost was established as 1/20 of the engineer's opinion of probable maintenance cost for the A/C network. After allowing for a $200,000 contribution by the City, the remainder of $258,400 per year must be raised.

After establishing the residential dwelling unit contribution at $15, the non-residential parcels were computed based on the multiplier described above and are listed below:

- $15.00 Residential
- $104.05 Non-Residential, 0 – 4,999 sf building(s)
- $208.10 Non-Residential, 5,000 – 9,999 sf building(s)
- $312.14 Non-Residential, 10,000 – 24,999 sf building(s)
- $416.19 Non-Residential, 25,000 + sf building(s)

Local Roads

Local roads are considered to be all City-owned roadways that are neither arterial/collector roads nor alleys. These roadways do not encourage 'through traffic' and are characterized by lower speeds, limited connectivity, decreased access control and comprise the bulk of the network's lane miles. While local roads are an integral part of the overall roadway network, they provide special benefit to the residents that are physically located adjacent to the local roads. Therefore, the recommended assessment methodology begins with the A/C assessment list (described above) and excludes parcels that are not contiguous to a city-owned/maintained local roadway. The members of the modified list (local road assessment list) are then assessed based on the same property owner classifications used to assess the A/C roadways. The annual maintenance cost was determined by subtracting the A/C maintenance cost from the $1.7 million dollar per

year citywide maintenance estimate. After the City allocates LOGT, solid waste franchise fees, Penny for Pasco (2), and general revenue transfers, the difference of $541,600 per year must be generated. The City and CAC determines that an assessment to the network of beneficiaries is recommended. After establishing the residential dwelling unit contribution at $70, the non-residential parcels were computed based on the multiplier described above and are listed below:

- $70.00 Residential
- $115.45 Non-Residential - 0 – 4,999 sf building(s)
- $230.91 Non-Residential - 5,000 – 9,999 sf building(s)
- $346.36 Non-Residential - 10,000 – 24,999 sf building(s)
- $461.81 Non-Residential - 25,000 + sf building(s)

It should be noted that if a parcel is located adjacent to a local City owned roadway it would be responsible for paying both the “Local” and “A/C” assessments. However, if the subject parcel is located adjacent to only A/C, State/County, or privately owned/maintained roadways it would only be subject to the A/C component of the assessment.

Example

Single-family residence on a local road:

$15 (Arterial/Collector)
$70 (Local Road)
$85 (Total)

Small non-residential (<5,000 sf) contiguous to a local road:

$104.05 (Arterial/Collector)
$115.45 (Local Road)
$219.50 (Total)

Non-residential (5,000 – 9,999 sf) contiguous to a local road:

$208.10 (Arterial/Collector)
$230.91 (Local Road)
$439.01 (Total)

Non-residential (10,000 – 24,999 sf) contiguous to a local road:

$312.14 (Arterial/Collector)

$346.36 (Local Road)

$658.50 (Total)

Large non-residential (>25,000 sf) contiguous to a local road:

$416.19 (Arterial/Collector)

$461.81 (Local Road)

$878.00 (Total)

VI. PROPOSED PAVEMENT MANAGEMENT PLAN DETERMINATION OF THE ASSESSMENT (Legal Qualifications as Clarified by City Attorney)

While the City has asserted that its Home Rule powers, pursuant to State Statute 166.021, provides the legal basis for a non-ad valorem assessment program for street improvements, there is other supplemental statutory authority which this report also considers in the development of the proposed methodology. It is our understanding that Florida Statute (FS) Chapter 197.3631 provides the non-ad valorem option for the collection of the assessments subject to the agreement of the County Property Appraiser and the County Tax Collector. FS Chapter 197.3632 establishes the need to provide timely notices and to hold a public hearing. Chapter 170 of the Florida Statutes describes that "special assessments" also supported the application of the methodology with the caveat that the imposition of the assessments on a "citywide basis" is not considered in this analysis to conflict with the broad concept of 'special benefit'. While past assessments have been levied based on linking improvements directly to adjacent properties based on road footage and assessment categories, this assessment is to the benefit of the overall system of transportation improvements owned and/or maintained by the City. In considering special benefit, the question of geographic proximity must be considered. Specifically, *"Can a special benefit be derived from the road project by all properties within the road network even if all properties are not adjacent to all of the specific reconstruction of roads to be funded by the assessment?"* The Florida Supreme Court ruled that, *"Although a special assessment is typically imposed for a specific purpose designed to benefit a specific area or class of property owners, this does not mean that the cost of services can never be levied throughout a community as a whole. Rather, the validity of a special assessment turns on the benefits received by the recipients of the services and the appropriate apportionment of the cost thereof. This is true regardless of whether the*

recipients of the benefits are spread throughout an entire community or are merely located in a limited, specified area within the community."

There are three main requirements for valid special assessments under Chapter 170:

1. The improvements to benefited properties, for which special assessments are levied, be implemented for an approved and assessable purpose (FS 170.01).
2. Special assessments can only be levied on those properties specially benefiting from the improvements (FS 170.01).
3. The special assessments allocated to each benefited property cannot exceed the proportional benefit to each parcel (FS 170.02).

The City's Street Improvement CIP contains a "system of improvements" including the funding, construction, and/or acquisition of roadway improvements, all of which are considered to be for an approved and assessable purpose (FS 170.01) which satisfies the first requirement for a valid special assessment as described above. Additionally, the improvements will result in all properties within the assessment area receiving a direct and specific benefit, thereby making those properties legally subject to assessments (FS 170.01), which addresses the second requirement above. The third requirement is met by that the specific benefit to the properties is equal to or exceeds the cost of the assessments levied on the benefited properties (FS 170.02).

The first requirement for determining the validity of a special assessment is established within the list provided in FS 170.01. However, the second and third requirements for a valid special assessment require a more analytical examination. As required by FS 170.02, and described in the preceding section entitled "Allocation Methodology," this approach involves identifying and assigning value to specific benefits being conferred upon the various benefitting properties, while confirming the value of these benefits exceed the cost of providing the improvements. These special benefits include, but are not limited to, the added use of the property, added enjoyment of the property and the probability of increased marketability, and value of the property. The determination has been made that the duty to pay the non-ad valorem special assessments is valid based on the special benefits imparted upon the property. These benefits are derived from the resurface and replacement program which will result from the improvements in quality of the transportation system and the value enhancement that will result in a citywide high-quality maintenance Pavement Management Plan.

VII. PROPOSED PAVEMENT MANAGEMENT PLAN EXEMPTIONS AND APPEALS

Property within the City that currently is not, or upon future development, will not be subject to the special assessments include publicly owned (State/County/City/CDD) tax-exempt parcels such as lift stations, road rights-of-way, waterway management systems, rivers/lakes, jurisdictional wetlands, common areas, and certain lands/amenities owned by HOA(s). To the extent it is later determined that a property no longer qualifies for an exemption, assessments will be apportioned and levied based on the methodology established in this option. Because the City still has undeveloped parcels which may cause the total number and class of participants to vary as time passes, the annual assessment charge for each class should be reviewed every five (5) years to determine if the level should be adjusted. Finally, lands that may become annexed into the City will become assessable upon the annexation.

All appeals shall be in writing addressed to the City Manager's Office, 5919 Main St., New Port Richey, Florida 34652. The City Manager or his/her designee shall have 30 business days to respond in writing to the appellant. The City Manager's or his/her designee's decision shall be final. Appeals shall be based solely on methodology application such as, but not limited to, misclassification, exemption status, and mathematical errors. Requests for assessment exemption will not be permissible.

VIII. PROPOSED PAVEMENT MANAGEMENT PLAN CREDITS AND COLLECTIONS

In order to credit those residents that have already paid for previous street assessments, the City considered street improvements project assessments over the past 20 years. During this time, there have been six (6) street improvements project assessments.

To calculate a credit for previously paid street improvements project assessments, the City will identify the assessment amount each individual resident received and divide it by the useful life of the improvement made to the street, which is based on a 20-year design lifespan, to determine the annual value of assessment paid.

$$\frac{\text{Assessment Amount}}{\text{Useful Life of Improvement (20 Years)}} = \text{Annual Value of Assessment Paid}$$

The annual value of assessment paid will be multiplied by the remaining useful life of the improvement to determine the credit.

Remaining Useful Life = 20 Year Useful Life of Improvement - (2017 [Current Year] - First Year of Assessment)

Annual Value of Assessment Paid x Remaining Useful Life = ***Credit Amount***

As an example, let's assume that a resident was assessed $2,000 in the 2008 street improvements. Below is how the credit amount would be calculated:

$\frac{\text{Assessment Amount (\$2,000)}}{\text{Useful Life of Improvement (20 Years)}}$	=	$100 (Annual Value of Assessment Paid)
20 Year Useful Life – (2017 [Current Year] – 2008 [First Year of Assessment])	=	11 Years (Remaining Useful Life)
$100 (Annual Value of Assessment Paid) x 11 Years (Remaining Useful Life)	=	**$1,100 Credit Amount**

For those property owners who have already paid their past street assessment, the calculated credit would be applied to the new annual Pavement Management Plan Street Assessment each year until the credit is exhausted. For those property owners who still owe the City for the past street assessments, the calculated credit would reduce the amount still owed to the City. The City would still collect any unpaid assessment.

IX. ALLEYS

There are approximately 5.2 miles of alleyways located in the City limits of which two (2) miles are improved. These facilities are not an integral part of the City's roadway network and the benefit of improving them would be limited to the adjacent property owners. Historically, property owners adjacent to alleys have two types of opinions on the condition of their alleys. Some are in favor of improving them due to the dust created by vehicles traveling in the alley, which prevents the residents from opening their house windows to enjoy the weather at certain times of the year. These property owners also express the frustration of not being able to keep their vehicles clean because of the dust and mud. Other property owners are not in favor of improving their alleys and only want minimal maintenance performed. They feel as though if the alleys were improved, traffic volumes and speeds would increase greatly. It is therefore the recommendation of the Citizens Advisory Committee that alleys be excluded from the above-mentioned pavement management plan.

It is the recommendation of this report that the City create an Alley Improvement Policy and Guideline Criteria Manual to address future alley improvement requests.

APPENDIX A

ROADWAY NEEDS ASSESSMENT REPORT

I INTRODUCTION

High quality transportation systems are essential to a thriving community. Suburban roadways allow residents to participate in commerce as well as facilitating the transportation of goods to local markets. Roadways are integrated into the fabric of America and their maintenance has become a significant responsibility of local government. In response to this obligation, the engineering community has developed pavement management systems to assist decision makers in finding optimum strategies for providing, evaluating, and maintaining pavements in a serviceable condition over a period of time.

The purpose of this Roadway Needs Assessment Report is to identify the general condition of the approximately 70 miles of paved roadways owned and maintained by the City of New Port Richey (City). The 5.2 miles of right-of-way without paved roads were omitted from this study. As indicated in the project Task Order, limitations in both schedule and budget mandated that the assessment be based on visual observations and is not an exhaustive analysis utilizing field measurements and empirical data collection.

It is understood that the City will utilize this report for:

- Updating the Geographic Information System (GIS) database
- Making decisions regarding funding / assessing roadway improvements
- Prioritizing roadway maintenance / improvement projects

II METHODOLOGY

Figure 1 - Typical Roadway Grade 8 (Grand Blvd.)

The methodology employed for this evaluation was based on the Pavement Surface Evaluation and Rating (PASER) system developed by the Transportation Information System of the University of Wisconsin – Madison. The PASER system was developed as an alternative to empirical data intensive models to provide local agencies a simplified rating system focused on surface condition with which to evaluate their roads. PASER uses visual inspection to evaluate pavement surface conditions and rates the condition on a ten-point scale. The PASER manual provides photographic standards that serve as guides to identify both the distresses as well as the numerical rating (ten-point scale). ~~A copy of the PASER manual is provided in **Appendix A.**~~

There are four major categories of common asphalt pavement surface distress:

- Surface Defects – Raveling, Flushing, Polishing
- Surface Deformation – Rutting, Distortion (rippling & shoving), Settling
- Cracks – Transverse, Reflection, Slippage, Longitudinal, Block, and Alligator
- Patches and Potholes

Figure 2 - Typical roadway grade 2 (Queens Ln.)

III OBSERVATIONS

The field work was conducted over several days beginning in December 2014. The City was broken into a matrix that allowed the entire city to be depicted on a series of letter size aerial photographs (200 scale) that were provided to field personal in a binder with blank data entry forms to allow field observations to be manually recorded for each street segment evaluated. The field data sheets have been included in ~~**Appendix G**~~.

As expected, very few roads were graded at the extreme ends of the continuum (either 'failed' or 'excellent'). Over 80% of the paved streets were rated between 6 and 8. Only 6% of the paved roadways within the City rated below 6. Although roadway segments were broken down to segments as small as a block, field personnel did note that there are several instances where a segment was punctuated by a relatively small strip that was completely inconsistent with the rating of the adjacent pavement. In these instances, the rating of the overall segment was based on the prevailing portion.

The Roadway Rating Map (~~**Appendix B**~~) was created to provide a graphical representation of the current pavement conditions. In order to simplify use of this map, the data was grouped using statistical break lines into four discrete groups. The first group includes the poorest rated roads (grades 1 – 4); the last group combines the highest rated segments (grades 8-10); the remaining segments are distributed throughout the remaining two groups.

IV PAVEMENT MANAGEMENT

Pavement management is the science of conducting periodic pavement restoration in order to maintain the driving surface in an acceptable condition. The service life of the asphaltic pavement is largely a function of the number of trips traveled (ESAL – Equivalent Single Axle Load), the Structural Number of the pavement section, and the impact of environmental factors like high ground water or frequent flooding. As the roadway segment ages the ride quality deteriorates at a faster and faster rate. The Federal Highway Administration (FHWA) graphic shown in Figure 3 depicts both this rate of deterioration as well as the life-cycle impact of frequent 'preventative' maintenance and less frequent 'rehabilitation' maintenance. The graphic in Figure 4 provides a generalized financial comparison between preventive and rehabilitative maintenance.

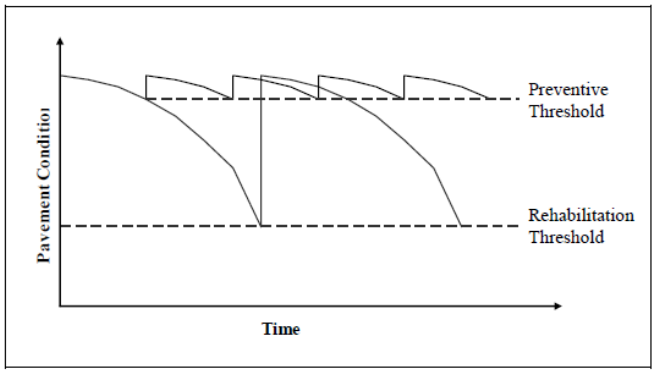

Figure 3 - Time vs. Ride Quality

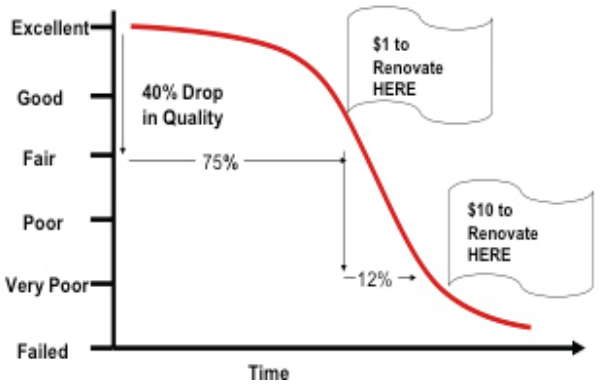

Figure 4 - Time vs. Maintenance Cost

V SIDEWALKS

While Genesis did not evaluate the existing sidewalk inventory as part of this task order, we had the opportunity to work with City staff to consolidate the data collected by the City. The GIS shape files provided by the City includes both location of existing sidewalk within the public roadway network as well as existing sidewalk width. This information was supplimented in April 2015 by City staff who evaluated the current condition of the sidewalk. Exhibits depicting both the extents and quality rating of the existing sidwalk network are included in ~~**Appendix C**~~.

VI CONCLUSIONS / RECOMMENDATIONS

The City has a considerable inventory of roadways requiring deferred maintenance. Based on a projected annual maintenance budget of $1 million dollars, it will take several maintenance

cycles in order to service the City's entire roadway inventory. That being said, the quantity of poorly rated road segments is relatively small and can be addressed during the first few maintenance cycles.

With multiple roadway segments competing for the same maintenance dollar, developing a methodology for prioritizing this maintenance is an important prerequisite to implementing any rehabilitative effort. While the simplest alternative would be to rank the roadways from worst to best, this methodology yields a very low return on investment. Case in point – the City has over five miles of unpaved alleys that were rated zero. Improving these facilities will require full roadway construction that is very expensive and would only benefit a small number of residents.

Alternatively, the list should prioritize roads with higher average daily traffic because it will benefit the greatest number of residents and the number of trips (ESAL) is one of the variables impacting pavement condition. As shown in Figure 4, the active roadways on the steep portion of the curve are degrading at a faster rate than segments at either end of the curve. Therefore, spending money to repair higher volume roads in the 'preventative threshold' is more beneficial to the citizenry than allowing these roads to slip beyond the 'rehabilitation' threshold because funding was directed toward more expensive rehabilitation projects serving a small number of residents.

A) RECOMMENDED ANNUAL MAINTENANCE PLAN

It should be noted, that ongoing small scale pavement repair is a necessary part of every municipalities annual maintenance budget. This work typically includes patching potholes and other similar critical maintenance activities. Many local highway agencies include crack sealing as part of their preventative maintenance program. Cracks up to ¾" wide are either cleaned, sawn, or routed and then sealed to prevent moisture from infiltrating the pavement structure. A successful maintenance program utilizes a multi-pronged approach that begins with repairs that directly improve the ride quality for the motoring public and ends with preventative maintenance that extends the operating life of the roadway system.

B) RECOMMENDED 5 YEAR MAINTENANCE PLAN

Genesis contacted local paving contractors to obtain current unit pricing estimates and developed an Opinion of Probable Construction Cost for a square yard of pavement based on a series of factors that include pavement condition rating, as well as the need for milling. The unit cost estimate for very poorly rated roads include significant removal and replacement of base / asphalt while the cost of more highly rated roadway segments include only small quantities of patching, leveling, and a 1.5-inch thick overlay. The spreadsheet showing these calculations is included in ~~**Appendix D**~~ for your review.

It should be noted that the unit cost value was developed using the best available information in a very dynamic market and is not a substitute for hard bids of detailed construction drawings. In order to account for anticipated inflation that may occur between the drafting of this report and the actual construction, Genesis consulted the FDOT Transportation Costs Reports (~~Appendix D~~) and applied 'Inflation Factors' to the future year maintenance plan budgets.

The following suggested maintenance plan is based primarily on roadway condition, but also considers:

- Prioritizing projects near the Preventative Threshold with high traffic volume.
- Addressing similarly rated roadways in close geographic proximity to minimize costs associated with project mobilization.
- Extending project limits to a 'logical terminus' even though segments within the project may be ranked differently.
- Balancing anticipated maintenance cost and projected maintenance budget (i.e. blending large segments and small segments to balance the budget)

The associated costs anticipated for each segment as well as graphical exhibits showing each work cycle can be found in ~~Appendix E~~.

CYCLE ONE

SEGMENT	NAME	RATING	LENGTH (FT)
1	Congress (Massachusetts to Louisiana)	3,5,6	5,900
2	Orchid Lake (Congress to Gabriel)	3,6	1,900
3	Evies Way	4	415
4	Francine Drive	4	310
5	Rutillio Court	4	650
6	Ferguson Court	4,5	260
7	Grant Ave.	2	340
8	Drinkard Drive	5	550
9	Senate Lane	4	430

Note:
Subsequent to issuing the Roadway Needs Assessment Report Madison Street was added to Cycle 1

APPENDIX B

PROPERTY APPRAISER NAL(DOR) CLASS CODES

GARY JOINER PROPERTY APPRAISER
PASCO COUNTY, FLORIDA

Reference Codes

NAL(DOR) Class Codes	
Code	**Description**
00	Vacant Residential
01	Single Family
02	Mobile Homes
03	Multi-Family -10 units or more
04	Condominium
05	Cooperatives
06	Retirement Homes not eligible for exemption
07	Miscellaneous Residential(migrant-boarding homes)fna Villa Homes
08	Multi-Family -fewer than 10 units
09	Residential Common Elements/Areas
10	Vacant Commercial
11	Retail Stores, One Story
12	Stores, Office, SFR -mixed use
13	Department Stores
14	Supermarkets
15	Shopping Centers Regional
16	Shopping Centers Community
17	1 Story Office
18	Multi-Story Office
19	Professional Service Buildings
20	Airports, bus terminals, piers marinas
21	Restaurants, cafeterias
22	Drive-In Restaurants
23	Financial Institutions (banks,saving & loan,mortgage,credit co)
24	Insurance Company Offices
25	Service Shops Non-Automotive
26	Service Stations
27	Auto Sales, Service, etc.
28	Rental MH/RV Parks, parking lots (commercial or patron)
29	Wholesale manufacturing outlets, produce houses
30	Florist, Greenhouses
31	Theaters Drive-In, open stadiums
32	Theaters auditoriums enclosed
33	Night Clubs, Bars, lounges
34	Bowling Alleys, skating rinks, pool halls, enclosed arenas
35	Tourist Attractions, fairgrounds (privately owned)
36	Camps
37	Race Tracks
38	Golf Courses, driving ranges
39	Hotels, Motels
40	Vacant Industrial
41	Light Manufacturing
42	Heavy Industrial

43	Lumber Yards, sawmills
44	Packing Plants
45	Breweries, Wineries, distilleries, canneries
46	Food Processing
47	Mineral Processing
48	Warehousing (Block or Metal)
49	Open Storage, junk yards, fuel storage
50	Improved agricultural rural homesite
51	Cropland Class I
52	Cropland Class II
53	Cropland Class III
54	Timber - Site Index I
55	Timber - Site Index II
56	Timber - Site Index III
57	Timber - Site Index IV
58	Timber - Site Index V
59	Timber - Not Classified by site index to Pines
60	Grazing Land Class I
61	Grazing Land Class II
62	Grazing Land Class III
63	Grazing Land Class IV
64	Grazing Land Class V
65	Grazing Land Class VI
66	Orchard Groves
67	Poultry, Bees, etc.
68	Dairies, Feed Lots
69	Ornamentals
70	Vacant Institutional
71	Churches
72	Schools, Colleges, Private
73	Hospitals, Private
74	Homes for the Aged
75	Orphanages, other non-profit or charitable services
76	Mortuaries, Cemeteries, crematoriums
77	Clubs, Lodges, Union Halls
78	Out Patient Clinics, Sanitariums, convalescent, rest homes
79	Cultural organizations, facilities
80	Vacant Governmental (municipal,counties,state,federal,dot,swfwmd)
81	Military
82	Forests, Parks, recreational areas
83	Schools, Public
84	Colleges Public
85	Hospitals Public
86	Other County
87	Other State
88	Other Federal
89	Other Municipal
90	Leasehold Interests (government owned non government lessee)
91	Utilities
92	Mining lands, petroleum or gas lands
93	Subsurface rights
94	Right-of-Way, Streets, Ditch
95	Rivers and Lakes, Submerged Lands
96	Sewage Disposal, Waste Lands, Swamp
97	Outdoor Rec./Parkland, High-Water Recharge
98	Centrally Assessed Railroad
99	Non-AG (Over 20 Acres)

APPENDIX C

COLLECTOR/ARTERIAL ROADWAY NETWORK MAP

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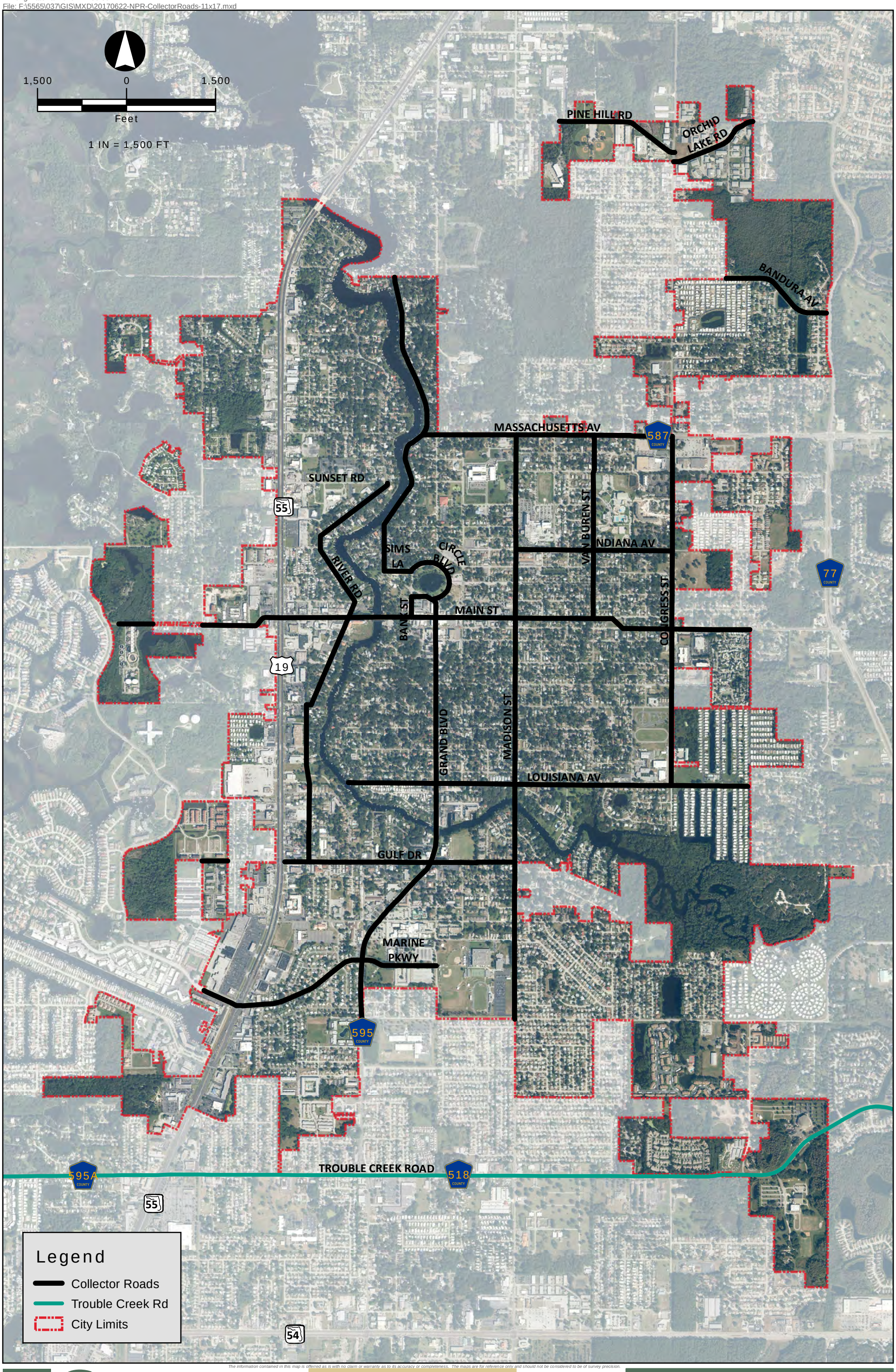

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New Port Richey Collector Roads