

TELLER COUNTY PUBLIC WORKS

DEPARTMENT OF TRANSPORTATION



ROAD MAINTENANCE & IMPROVEMENT PLAN

TABLE OF CONTENTS

<u>SECTION</u>	<u>PAGE (S)</u>
TRANSPORTATION OPERATIONS	3
OUR MISSION	3
GUIDING PRINCIPLES	3
ASSET MANAGEMENT	3
THE ROAD MAINTENANCE & IMPROVEMENT PLAN	4 - 5
PURPOSE	5
SCOPE	5
ROAD ASSESSMENTS	6
THE ROAD MAINTENANCE PLAN	7 - 8
I. GRAVEL ROAD MAINTENANCE	
II. HARD SURFACE ROAD MAINTENANCE	
THE ROAD IMPROVEMENT PLAN	9 - 10
I. HARD SURFACE ROAD IMPROVEMENT	
A. New Hard Surface	
B. Design Life Application	
II. ROAD RECONSTRUCTION	
CONCLUSION	10

TRANSPORTATION OPERATIONS

“The provision of integrated systems and services that makes the best use of existing transportation systems to preserve and improve customer-related use. This is done in anticipation of, or in response to, both recurring and non-recurring conditions. Operations includes a range of activities in both urban and rural environments, including: routine traffic operations, public safety responses, incident management, snow and ice management, network/facility management, planned construction disruptions, and traveler/shipper routes.”

OUR MISSION

The Department of Transportation’s mission is to plan and use our resources wisely to provide safe and reliable transportation systems through maintenance and improvement. We will strive to accomplish this mission with a spirit of teamwork, by allowing open communications, and with a true sense of dedication and responsibility to our community.

GUIDING PRINCIPLES

- *PROVIDE A SAFE AND RELIABLE TRANSPORTATION SYSTEM --- ONE THAT IS THE MOST EFFICIENT WITH THE AVAILABLE FUNDING.*
- *PROVIDE QUALITY CUSTOMER SERVICE BY STRIVING TO PROVIDE MAINTENANCE LEVELS NECESSARY TO ACHIEVE PUBLIC SATISFACTION.*
- *ENSURE THAT PROJECTS PROVIDE THE MOST FUNCTIONAL AND ECONOMIC BENEFIT THROUGH RESPONSIBLE EXPENDITURE OF FUNDS AND QUALITY INTERGOVERNMENTAL RELATIONS.*

ASSET MANAGEMENT

Asset management can be defined as a comprehensive and structured approach to the long-term management of assets as tools for the efficient and effective delivery of benefit. The emphasis is on the asset being a means to an end and not an end itself.

THE ROAD MAINTENANCE & IMPROVEMENT PLAN

The cost of County roads represents a large portion of our citizens' investment in transportation infrastructure. Adherence to principles of asset management will ensure that the County will follow a set of guiding principles and best management practices for making informed transportation decisions. These decisions not only cover the allocation of funds for program or project areas; they also cover deployment of other resources such as staff, equipment, materials, information and property. Asset management is concerned with the entire lifecycle of the transportation system including policy, planning, engineering, right of way, construction, and maintenance operations.

The **Road Maintenance & Improvement Plan** is comprised of two separate plans: the **Road Maintenance Plan** and the **Road Improvement Plan**. Each plan has a separate purpose and different components, but collectively, both plans will represent a single management plan that will ensure that our current infrastructure is properly maintained and that we look towards the future to continually evaluate and improve our transportation infrastructure with the ultimate outcome of reaching a 20-year design life on the majority of our asphalt roads.

The **Road Maintenance & Improvement Plan** will utilize the principles of asset management through a systematic process of effectively maintaining, upgrading, and preserving assets, combining engineering with sound business practice and economic rationale, and providing the tools to facilitate an organized and flexible approach to making the decisions necessary to work towards achieving public expectation.

In addition, the plan will allow for strategic planning based on policy, goals and objectives such that the County will explore it's options and trade-offs within the transportation system. Based on the decisions made in the planning stage, resources can be properly allocated and services can be programmed and delivered to the community with the ultimate goal of providing a desired level of services in the preservation and improvement of our transportation system.

Inaugurating a comprehensive **Road Maintenance & Improvement Plan** involves several steps:

1. Continually analyze the comprehensive database of the current road system.
2. Periodically review and evaluate current road conditions.
3. Reevaluate and establish the appropriate maintenance needed.
4. Evaluate road segments annually after winter damage.
5. Implement and adhere to planned and proven preventive maintenance strategy.
6. Evaluate and recommend roads for improvements.
7. Continually examine immediate and future funding sources.
8. Program, plan, design, and execute road improvements.
9. Establish a public relations component to communicate annual goals and objectives.

Proper planning and defined goals are an essential component of an efficient operation. Operations will progress in a well-planned fashion so that each component of the transportation department can plan and execute their tasks in an efficient well-timed manner.

The goal in the first year of the **Road Maintenance & Improvement Plan** will be to establish a standard of preventive maintenance, perform the prescribed annual maintenance operations and verify that the current resources will allow for and can sustain an appropriate level of services.

PURPOSE

The purpose of the **Road Maintenance & Improvement Plan** is to:

1. Recommend and carry out policy changes relating to the transportation system.
2. Identify options and trade-offs during the planning process.
3. Ensure that prescribed preventive maintenance is accomplished on our roads as outlined in the **Road Maintenance Plan** and to identify roads to be reclassified into the **Road Improvement Plan**.
4. Plan and secure funding for future improvements.
5. Allocate the appropriate resources to accomplish goals and targets.
6. Deliver services to the community in the most efficient, equal and responsible way possible.

SCOPE

The **Road Maintenance & Improvement Plan** will encompass all aspects relating to County roads such as:

1. Policy
2. Planning
3. Design
4. Right-of-Way
5. Construction
6. Maintenance
7. Improvement

In addition, the **Road Maintenance & Improvement Plan** will facilitate necessary planning to annually detail the resource allocation requirements to establish a level of regular maintenance of County roads and to guide the manner in which we construct and improve our roads. This will allow for consistency and quality relating to our transportation system.

ROAD ASSESSMENTS

As with any asset, preventive maintenance is the single most important factor in controlling costs and preserving an asset. Preventive maintenance will ensure that the asset (road) will provide acceptable performance throughout its prescribed lifecycle.

All existing roads will be inspected every 36 months to ensure consistent and scheduled preventive maintenance throughout their prescribed useful lifespan in concert with GASB 34 requirements. Recommendations will be made for bringing any substandard roads to an acceptable level in the future.

The safety of our roads is paramount. The plan will ensure that for each road or road segment accident data is compiled and evaluated annually to identify hazards that can be minimized and to measure safety improvements to the County Road System.

Road quality will be based on a rating system. Roads will be rated by the following criteria: (not in order of priority)

1. Safety
2. Traffic Count
3. Structural integrity
4. Drainage
5. Surface Distress
6. Riding Comfort
7. Signs and markings

This data will be continually analyzed to ensure that Road Maintenance and Improvement operations can be focused where they will provide the most benefit to the County transportation system as a whole.

THE ROAD MAINTENANCE PLAN

The **Road Maintenance Plan** will establish the standard for which all roads will be maintained on a scheduled basis. It will ensure that our current transportation infrastructure is preserved in a systematic and consistent manner; most importantly, in keeping with accepted practices and within the principles of asset management.

It should be noted that, since asset management is concerned with the entire lifecycle of an asset, actions taken across this lifecycle (maintenance) are interrelated; hence, we must ensure that what we do today puts in place what we will need for tomorrow.

The **Road Maintenance Plan** will comprise of Gravel Road Maintenance and Hard Surface Maintenance as outlined below:

I. GRAVEL ROAD MAINTENANCE

YEAR ROUND:

- **Grading** – grading/ditching of low A.D.T. roads
- **Dust suppressant** – application and maintenance of high A.D.T. roads (300 and above)
- **Drainage** – culvert installation and maintenance
- **Vegetation management** – grass, weeds, tree trimming and mowing
- **Signage** – installation and repair
- **Resurfacing** – adding gravel base as needed
- **Guard railing** – guard rail installation and repair

WINTER:

- **Plowing/Ice Control** – plow snow, apply sand, culvert ice removal

II. HARD SURFACE ROAD MAINTENANCE

YEAR ROUND:

- **Patching** – pot hole/road surface repair
- **Drainage** – culvert installation and repair
- **Vegetation management** – grass, weeds, tree trimming and mowing
- **Signage** – installation and repair
- **Guard railing** – guard rail installation and repair

SUMMER:

- **Maintenance Overlay** – apply chip seal and/or asphalt overlay to either extend the life of a hard surface pavement (chip seal/asphalt) until such time that it can be reconstructed to a 20-year design life, or a chip seal application applied onto a 20-year design life asphalt roadway to extend its life cycle. Data such as an increase in ADT or usage (axle weight) and road surface condition will be used to determine when a maintenance overlay is necessary.
- **Shouldering** – keep material snug against hard surface
- **Striping** – pavement markings

WINTER:

- **Crack sealing** – seal cracks to prevent moisture integration
- **Plowing/Ice Control** – plow snow, apply sand, culvert ice removal

THE ROAD IMPROVEMENT PLAN

The **Road Improvement Plan** will establish the procedures, standards and requirements related to road improvements. All roads placed into this plan will be designed and constructed with the ultimate outcome of reaching a minimum 20-year design life on applicable asphalt roadways. We will use industry standards and proven design strategies. Both historical and current data, including but not limited to traffic count data, maintenance needs, road use, safety, and engineering concerns, will be analyzed annually to determine if a road should be reclassified into this plan.

Engineering, Right-of Way, and Operations will develop a project cost and timeline within the scope of the project. Once completed, the project will be considered for approval. This process may take multiple years to complete. Factors such as right-of-way, budgetary constraints, weather and resource allocation must be considered.

Each improvement project will be evaluated, and an assessment will be conducted on the impact to maintenance operations. If improvement operations are determined to compromise maintenance operations, alternatives such as overtime, weekend work, or subcontracting should be recommended.

The **Road Improvement Plan** will comprise of Hard Surface Road Improvement and Road Reconstruction as outlined below:

I. HARD SURFACE ROAD IMPROVEMENT

Many of the roads that will meet the criteria for the **Hard Surface Road Improvement** are the roads that have required chemical dust suppressant applications. This process, although necessary, is time consuming and expensive and consequently adds to the life cycle cost of the road. However, the dust suppressant is an effective way to stabilize the road base in preparation for a surface treatment such as chip seal. Therefore, roads that fall under the **Hard Surface Road Improvement** are those that are currently gravel roads that need to be hard surfaced (i.e. – chip seal application, asphalt application).

A. New Hard Surface

Hard Surface Road Improvement roads receiving a first application of chip seal or asphalt will be placed under the **New Hard Surface** category.

B. Design Life Application

Hard Surface Road Improvement roads receiving any subsequent application of chip seal or asphalt will be placed under the **Design Life Application** category.

II. ROAD RECONSTRUCTION

A road starts the process of deterioration as soon as it is constructed. Maintenance operations are designed to maximize the prescribed lifecycle of a road during its serviceable life. However, under certain circumstances, the road base may deteriorate and a 20-year design life may be impossible to achieve with only a surface treatment. When this is determined to be true, the road will be recommended for reconstruction. This is to ensure that the base will support the surface treatment. Much like a house, you cannot build on a poor foundation.

During the process of infrastructure (road) assessments, roads or road segments warranting reconstruction will be engineered and eventually constructed with a minimum design life.

CONCLUSION

The Department of Transportation will submit an annual **Road Maintenance and Improvement Plan** to the Administration for review and approval. The plan will detail all programming and projects for the following year. The creation of this annual plan will allow the department to work as a team to reevaluate past performance, recommend ways to become more proficient, and facilitate planning for today's problems and future solutions consistent with its mission and guiding principles.

The implementation of this plan does not represent immediate resolutions to every concern; however, it "paves" the way for continued improvement to our transportation system. We will always work within policies and establish reasonable objectives and translate these objectives into an overall system performance for both our day-to-day and strategic management. Data will be used to analyze our options and tradeoffs to ensure that what we do today improves our tomorrow. Decisions will be based on quality information derived from objective analysis. We will monitor and measure our performance to provide clear accountability. Feedback on our overall performance will be accepted, so that we can constantly improve our delivery of services to our community.

In the most basic form, we will always ask the question, "Knowing we only have limited resources to spend on our system, what is the most beneficial and productive way to spend it that will provide the most benefit to our community?"