



SANTA FE COUNTY ROAD IMPROVEMENT POLICY

Exhibit A

GOAL: It is the goal of Santa Fe County (“County”) to promote public safety and to enhance the quality of life for all its citizens. As such, we realize the importance of having an adequate transportation network and the vital role which it plays in achieving this goal. As a part of our goal, Santa Fe County understands the importance of providing paved surface roads throughout the County by establishing a systematic approach by which unsurfaced roads which have been accepted for maintenance by the County (“County Roads”) can be upgraded to a paved or chip sealed surface.

It costs between \$400,000 and \$1,000,000 per mile to properly design and construct a new paved road. The cost is dependent upon the topography of the land, acquisition of easements and designed drainage structures that are required. Paving is an expensive alternative, in comparison to an unpaved road, which can be maintained for around \$3,000 per mile, per year.

Paved roads allow for higher vehicle flows, reduce weather-related delays, promote activities that improve local economic development and reduce the amount of maintenance required by County staff. The average daily traffic (ADT) typically used to justify paving an existing roadway, generally range from 50- 500 vehicles a day. Traffic volumes alone only account for one critical element in the equation. Types of vehicular traffic should also be considered. Consideration should be used in determining the structural values of the designed pavement cross-section, based on vehicle type and loading. Heavy truck traffic and buses must be accounted for, since they will cause the most damage to paved roads. So it is essential that the proper pavement design accounts for these impacts.

PURPOSE: To provide a formal written procedure for upgrading unsurfaced County Roads to a paved or chip sealed surface. To provide a policy which will maximize the effectiveness of available funds for the betterment of the County and to provide a means by which requests for upgrading a County Road can be reviewed uniformly and without bias.

METHOD OF REQUEST: An upgrade of unsurfaced County Road to a paved or chip seal surface may be requested by submitting a petition to the Director of Public Works with signatures from a minimum of seventy-five percent (75%) of affected property owners for normal consideration by the Board of County Commissioners (Board). Petitions may be submitted to the County Public Works Department.

However, the County may initiate such improvements, in which case no petition is necessary. Although the petition method is preferred, because it represents the voice of the citizens of the County, both the Board of County Commissioners and staff shall have the ability to present, for consideration, requests for paving, based on safety, traffic counts, functional classification and fund availability.

FORM OF PETITION: The petition shall be submitted to the Director of Public Works on a form approved by the County. Requests for upgrading unsurfaced County Roads can be made singularly or in combination of several roads. Each County Road will be evaluated individually.

DECISION EVALUATION PROCESS: The County takes a multi-disciplinary approach to determining the renewal, replacement and improvement of County Roads by staff and the Board of County Commissioners. The process takes into consideration the overall condition of the road, the stakeholder needs, and the changing needs of the adjacent properties around the road. The staff decision process includes the following key areas:

- The general condition of the road, including review of aspects such as right of way, drainage, current maintenance costs and number of work orders.
- The Pavement Surface Evaluation and Rating (PASER) rating of the road or the Pavement Condition Index (PCI) score
- The volume of traffic on the road, Average Daily Traffic (ADT).
- The ability to provide needed safety improvements.
- The potential for improved economic development in the area.
- Coordination with utility work or other entities.
- The ability to partner with other jurisdictions such as the city, state, towns or villages to share the cost burden of the project.

MINIMUM REQUIREMENTS: Current or projected funding levels will not permit the paving of all County Roads; therefore, reasonable minimum requirements must be adopted to determine if and when a roadway should be improved. Roadways should meet the following minimum requirements to be considered for upgrading:

1. Minimum vehicular volume of 50 Average Daily Traffic (ADT). The Public Works Department will determine the existing ADT by collecting traffic count data.
2. Property Owners must dedicate the necessary rights-of-way prior to a road improvement project receiving authorization to proceed.
3. Project should provide for continuity of the transportation network or fulfill the need for safety upgrades.

In unusual cases, a road upgrade may be justified where the minimum requirements are not satisfied but where other factors warrant upgrading such as:

- a) When a life cycle cost analysis, paved versus unpaved road, provides a savings to the County.
- b) When roadways have unsafe conditions that are correctable by upgrading to a paved surface.

ESTABLISHING PRIORITIES: After meeting the minimum requirements for upgrading, each roadway shall be evaluated utilizing the following transportation factors:

1. **Traffic Volume:** The Average Daily Traffic (ADT) is a measure of the demand for use of the County Road in its present condition. Thus, traffic volumes will be a prime indicator of priorities. It should be noted that upgrading an unsurfaced road to paved road could be a catalyst, that generates more traffic. Traffic counts will be taken over a three-day period under normal conditions and will be averaged for the ADT calculation.

2. **Route Classification:** Functional classification indicates the character of use and purpose. There are three main functional classifications as defined by the US Federal Highway Administration (FHWA): Arterial, Collector and Local.

a. Arterials - Connect centers of population and economic activity with each other and the state of municipal road systems. Occur at reasonable, regular intervals to collect traffic from roads of lesser importance. Carry the relatively heavy corridor traffic movements, either present traffic or potential traffic awaiting proper improvement to the route. Generally having an ADT of 1,000 vehicles or greater.

b. Collectors - Occur at reasonably regular intervals to collect traffic from local roads, channeling traffic onto the arterial road system. Serves minor population centers, not feasibly served by the arterial route. Generally having an ADT between 200 – 1,000.

c. Local Roads – Local roads are the most common and are not typically used for through traffic. Local roads provide direct access to the abutting properties. They usually have a dead end or if continuous serve areas of low population. Generally having an ADT of 200 vehicles or less.

Functional classification is a very useful factor in establishing priorities because it is an indicator of the relative importance of a route to the overall transportation network.

3. **Maintenance History:** Maintenance effort and costs per mile of roadway will also be considered in establishing priorities.

4. **Safety:** Safety is the upmost importance while prioritizing our road improvements. The current safe utilization of the road and potential safety improvements will be identified in establishing priorities. County Roads that become impassable or treacherous during inclement weather will have priority for road improvements.

Budgeting for capital improvements will be based on the values established by the Priority Index Equation described below and implemented in the County's five (5) Year Capital Improvements Program. The Priority Index Equation utilizes the four transportation factors listed above, to provide a Priority Index between 0 and 100. The higher the Priority Index, the more urgent the need is for a capital improvement project.

PRIORITY INDEX EQUATION

The equation for the priority index is: $PI = TF + FCF + MF + SF$

Where:

PI = Priority Index

TF = Traffic Factor (Table 1)

FCF = Functional Classification Factor (Table 2)

MF = Maintenance Factor (Table 3)

SF = Safety Factor (Table 4)

Traffic Factor. Each road will be rated by a Traffic Factor based on the table below.

Table 1 Traffic Factor (TF)

ADT	Traffic Factor
0-60	0
61-100	4
101-200	8
201-400	12
401-1000	16
1001-2000	20
2001-4000	24
4001+	28

Functional Classification Factor. Each road will be rated by Functional Classification Factor based on the table below.

Table 2 Functional Classification Factor

Road Classification	Functional Classification Factor (FCF)
Local	0
Collector	4
Arterial	8
Local School Bus Route	10
Collector School Bus Route	14
Arterial School Bus Route	18
<i>*School Bus Route adds 10 points to the FCF</i>	

Maintenance Factor. Each road will be rated by a Maintenance Factor based on Work Order Reports generated by the Public Works Department and based on the table below.

Table 3 Maintenance Factor

Annual Maintenance Cost Per Mile	Maintenance Factor (MF)
0 - \$1,000	0
\$1,001 - \$2,000	7
\$2,001 - \$4,000	14
\$4,001 - \$6,000	21
\$6,001 - \$8,000	28
\$8,001 +	34

Safety Factor. Each road will be rated by a Safety Factor. The Public Works Department will be contacted to verify if the road is considered unsafe during inclement weather. One example of this is low water crossings where the low water crossing is the only ingress and egress for the area. Another example is a road that becomes impassable during inclement weather, making travel unsafe or causing eminent danger.

Table 4 Safety Factor

Is Road Unsafe / Impassable During Inclement Weather	Safety Factor (SF)
No	0
Yes	20

Other Considerations. The mathematical calculation of the Priority Index Equation will form the basis for consideration, however, other considerations will be taken into account in establishing priorities. Examples of factors to be considered:

1. Combinations of Roadway Sections - There may be significant savings to the County from combining adjacent roadways into a single project.
2. Optimizing Budgets - Funding levels might not allow for a project costing \$2,000,000, to be completed in a given year, but would allow full funding for two smaller projects that each require funding of \$1,000,000.. Completion of the two smaller projects may be in the County's best interest.

3. Regional Balance - A program that has regional balance, is desirable; therefore, expenditures should be balanced between Commission and/or Maintenance Districts to the maximum extent possible.
4. Required roadway design - Each roadway will have specific design criteria, so as to allow for differences in the expected traffic volume and nature of the vehicles that are served. For example, a local road will be designed to a different typical cross section than an arterial road that is expected to serve high volumes of truck traffic. A calculation of Equivalent Single Axle Loads ("ESALs") for a road will help to determine the necessary pavement structure of the road. The County will benefit through long-term reductions of maintenance costs by projecting the ESALs for a road and then design to that standard.

ENGINEERING DESIGN STANDARDS: A professional engineer shall provide the design criteria and will utilize the following standards for each project for the County:

1. The most current edition of the American Association of State Highway and Transportation Officials ("AASHTO") "A Policy on Geometric Design of Highways and Streets" and "Roadside Design Guide" will be the basis of geometric design. However, the most current edition of AASHTO "Geometric Design of Low Volume Roads" may be used for roads where the ADT is less than 400.
2. The Santa Fe County Sustainable Land Development Code (SLDC), will be used.
3. Equivalent Single Axle Load (ESAL) - Not all road projects require a complete set of engineered drawings. However, at a minimum every road project will need a pavement design based on a 20-year service life and estimated ESALs. The ESALs shall be determined by ADT and must include accommodation for heavy truck traffic. The Pavement Structure will be based upon estimated ESALs and soil testing results of AASHTO T-190 (R-Value Test). The R-value test method is used to measure the potential strength of subgrade, subbase, and base course materials used for a road subjected to traffic. A Minimum of four subgrade R-Value Tests will be required for pavement design on each road or four R Value tests per mile, whichever is greater.

When upgrading an unsurfaced road to a paved surface, the horizontal and vertical alignment of roadway should be compatible with the anticipated driving speeds. Therefore, each roadway will be reviewed at the critical locations utilizing the above referenced standards to establish the design speed. Should costs or right-of-way prohibit the upgrade of all substandard sections, warning devices will be placed in accordance with the current edition of the Manual on Uniform Traffic Control Devices (MUTCD).

RIGHT-OF-WAY ACQUISITION: Due to availability of funds, County Policy regarding right-of-way acquisition is as follows:

1. The County prefers that required rights-of-way be donated by the property owners so that all available funding can be spent on the upgrading the road.

2. Roadways where property owners are willing to donate the required rights-of-way will have preference over roads where the easements require purchase.

3. On projects that affect large numbers of the traveling public, or where safety factors warrant, Santa Fe County reserves the right to acquire needed rights-of-way in accordance with the New Mexico Statutes Annotated § 42A (NMSA).

PARTICIPATION IN COSTS - PROPERTY OWNERS: Property owners shall be responsible for donating the necessary rights-of-way to complete the improvement if necessary.

COUNTY: The County shall be responsible for all engineering and construction costs to complete the project, utilizing current County and/or State Design Standards.

ADMINISTRATIVE REVIEW OF PETITION: All petitions will be referred to the Public Works Department for verification of property owner signatures, minimum requirements, and priority index rating. Departmental comments will then be submitted to the Transportation Advisory Committee for their review. After consideration of all factors, the Transportation Advisory Committee will submit its recommendations in writing to the Board of County Commissioners for their review and approval.

FISCAL IMPACT: For those projects that have been recommended for consideration by the Transportation Advisory Committee, the Public Works staff will develop a cost estimate of the proposed road project. If staff does not have sufficient knowledge of the project or engineering capability, a recommendation for solicitation of a Preliminary Engineering Report (PER) may be made. This may take place when existing road conditions present complex problems that require a number of design solutions for consideration.

DEVELOPMENT OF FIVE-YEAR CAPITAL IMPROVEMENTS PROGRAM: The Board of County Commissioners will direct the Public Works Department to include their recommendations in a Five (5) Year Capital Improvement Program (CIP). Each year prior to budget hearings, the Transportation Advisory Committee will review the current capital needs and recommend changes to the Capital Improvement Program for consideration by the County Commissioners.

The Public Works Department has created a spreadsheet that calculates the Priority Index. An example of this spreadsheet is shown below as Appendix A.