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El Paso County’s road impact fee program was adopted in 2012 to create a more equitable method of establishing a fair-share contribution than the previous system of individually-negotiated developer exactions and small-area fees. The program identifies transportation improvements needed to accommodate growth, fairly allocates the costs of transportation improvements among affected developments, and ensures the proper and timely accounting of improvements and funds. The fee program includes options for developers to join a Public Improvement District that covers a portion of the fee obligation with district taxes, allowing for reduced up-front impact fee payment at time of building permit.

**Fee Program Summary**

**Types of Improvements.** The road impact fee program covers major corridors that accommodate regional travel. The program does not include all roads, only higher traffic and longer-distance roads (arterials and major rural collectors) within unincorporated El Paso County. Improvements currently included in the fee program have been identified in the current update of the *Major Transportation Corridors Plan* (MTCP). This transportation plan identifies improvements needed to accommodate anticipated growth in the unincorporated area by the year 2040 based on small-area growth forecasts. Only capacity-expanding improvements to County arterials, County rural collectors and selected State roads (“major roads”) within the unincorporated area are included. The improvements that are eligible for funding with road impact fees are those identified in the Appendix, although this list may be modified between periodic MTCP/fee study updates with input from the stakeholder committee and approval by the Board of County Commissioners.

**Standardized Unit Costs.** The costs of improvements included in the fee program have been estimated based on standardized unit costs, developed in consultation with a stakeholder committee – the Oversight and Reimbursement Committee. The unit costs developed by the stakeholders are intended to be conservative and are not intended to fully cover all actual costs. The amount of developer credits or reimbursements for improvements identified in the MTCP will be based on the same unit costs. A 5% contingency has been added to address unexpected situations and cases in which the County will need to make improvements and pay higher actual costs. For this update, the unit costs developed in 2012 have been increased by 9.4% based on the recommendation of the stakeholder committee.

**Non-Growth-Related Costs Excluded.** The costs included in the fee calculations exclude any portions of project costs that are attributable to remedying existing deficiencies or accommodating future pass-through traffic.

**Revenue Credits.** The fees are reduced to account for future sales tax and gas tax revenue that new development will generate that will be used to remedy existing deficiencies and fund the planned improvements.
Developer Credits/Reimbursements. Colorado law requires that developers who construct improvements for which impact fees are charged receive a credit against their impact fees or be reimbursed. The road impact fee program provides the options of reduced fees and/or reimbursement to the developer in return for developer provision of eligible improvements.

Public Improvement Districts. In conjunction with the fee program, the County formed three Public Improvement Districts (PIDs) as an option to supplement the fee program. PID #1 is the controlling PID where all the money is transferred to and disbursed from. PID #2 collects a 10-mill property tax. PID #3 collects a 5-mill property tax. The two different mill levies are designed to give developers more choice of how to pay for the fee obligation. It allows developers to pick the mill levy and upfront fee that is best for their situation.

The PIDs issue bonds that are used to reimburse developers for a portion of their eligible improvement costs. Developers have the option of joining the PID at time of final plat. Developments within the PID are subject to a lower fee at building permit than developments that do not belong to the PID. If a development chooses to join the PID, then the property is subject to a mill levy of either 5 or 10 mills. Currently, there are 876 acres in PID #2 (10 mills) and 184 acres in PID #3 (5 mills).

For properties that join the PID, PID taxes cover a percentage of the impact fee costs. For example, for a single-family home in the 10-mill PID, the present value of future PID taxes equals roughly 81% of the fee obligation for a single-family home, so the fee paid at time of building permit is only about 19% of the full fee amount paid by a single-family home not in the PID. Former road impact fees for each of the PID options are shown in Table 1.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Unit</th>
<th>Not in PID</th>
<th>PID #3 (5 Mills)</th>
<th>PID #2 (10 Mills)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>Dwelling</td>
<td>$3,218</td>
<td>$1,915</td>
<td>$609</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>Dwelling</td>
<td>$2,010</td>
<td>$1,537</td>
<td>$1,061</td>
</tr>
<tr>
<td>Hotel/Motel</td>
<td>Room</td>
<td>$2,346</td>
<td>$1,639</td>
<td>$1,038</td>
</tr>
<tr>
<td>General Commercial</td>
<td>1,000 sf</td>
<td>$4,166</td>
<td>$3,059</td>
<td>$1,953</td>
</tr>
<tr>
<td>Convenience Comm.</td>
<td>1,000 sf</td>
<td>$7,355</td>
<td>$3,826</td>
<td>$304</td>
</tr>
<tr>
<td>Office</td>
<td>1,000 sf</td>
<td>$2,657</td>
<td>$997</td>
<td>$71</td>
</tr>
<tr>
<td>Public/Institutional</td>
<td>1,000 sf</td>
<td>$2,818</td>
<td>$1,091</td>
<td>$76</td>
</tr>
<tr>
<td>Industrial</td>
<td>1,000 sf</td>
<td>$3,050</td>
<td>$1,771</td>
<td>$492</td>
</tr>
<tr>
<td>Warehouse</td>
<td>1,000 sf</td>
<td>$1,559</td>
<td>$816</td>
<td>$72</td>
</tr>
<tr>
<td>Mini Warehouse</td>
<td>1,000 sf</td>
<td>$604</td>
<td>$122</td>
<td>$16</td>
</tr>
</tbody>
</table>

Source: El Paso County, “2015 Road Impact Fee Schedule,” from County’s web site.

The courts have generally held that PID bond authorizations only last for so long, perhaps 20 or 30 years. After that, the original authorization is held to be “stale,” and a new election must be held. If there were only a single PID that new developments are continually joining, it would likely be difficult after 20-30 years to persuade voters within the PID to approve new bond authorizations. For this reason, the concept is to create multiple PIDs that sunset after the initial bond issues have been retired. It is estimated that a new PID would be created approximately every eight years.
Updated Fee Schedule

The updated fees for properties not located in a PID are compared to the current fees in Table 2. The updated fees are about 10% higher than current fees.

Table 2. Updated Road Impact Fee Comparison (Not in PID)

See the Implementation Document 2018 for the most current fee amounts.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Unit</th>
<th>Current Fee</th>
<th>Updated Fee</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>Dwelling</td>
<td>$3,218</td>
<td>$3,532</td>
<td>9.8%</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>Dwelling</td>
<td>$2,010</td>
<td>$2,220</td>
<td>10.4%</td>
</tr>
<tr>
<td>Hotel/Motel</td>
<td>Room</td>
<td>$2,346</td>
<td>$2,587</td>
<td>10.3%</td>
</tr>
<tr>
<td>General Commercial</td>
<td>1,000 sf</td>
<td>$4,166</td>
<td>$4,572</td>
<td>9.7%</td>
</tr>
<tr>
<td>Convenience Comm.</td>
<td>1,000 sf</td>
<td>$7,355</td>
<td>$8,114</td>
<td>10.3%</td>
</tr>
<tr>
<td>Office</td>
<td>1,000 sf</td>
<td>$2,657</td>
<td>$2,933</td>
<td>10.4%</td>
</tr>
<tr>
<td>Public/Institution</td>
<td>1,000 sf</td>
<td>$2,818</td>
<td>$3,109</td>
<td>10.3%</td>
</tr>
<tr>
<td>Industrial</td>
<td>1,000 sf</td>
<td>$3,050</td>
<td>$3,366</td>
<td>10.4%</td>
</tr>
<tr>
<td>Warehouse</td>
<td>1,000 sf</td>
<td>$1,559</td>
<td>$1,720</td>
<td>10.3%</td>
</tr>
<tr>
<td>Mini Warehouse</td>
<td>1,000 sf</td>
<td>$604</td>
<td>$669</td>
<td>10.8%</td>
</tr>
</tbody>
</table>

Source: Current fees for developments not in a PID from Table 1; updated fees from Table 16.

The total fee amounts due are the same for projects in a PID, but the upfront fee portion is less. The upfront fees for properties located in the 5-mill or 10-mill PID are based on average assessed values and the estimated portion of the fee for each land use type that will be generated by the PID taxes. Updated upfront fees for properties located in a PID are compared with current upfront fees in Table 3. In general, the upfront fees are increasing by a larger percentage than the total fee amounts. This is because estimated values and the present value of future PID taxes are assumed to be unchanged, so the increase is all reflected in the upfront fee.

Table 3. Updated Upfront Road Impact Fee Comparison (In PID)

See the Implementation Document 2018 for the most current fee amounts.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Unit</th>
<th>5-Mill PID Upfront Fee</th>
<th>10-Mill PID Upfront Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Current</td>
<td>Updated</td>
</tr>
<tr>
<td>Single-Family</td>
<td>Dwelling</td>
<td>$1,915</td>
<td>$2,229</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>Dwelling</td>
<td>$1,537</td>
<td>$1,747</td>
</tr>
<tr>
<td>Hotel/Motel</td>
<td>Room</td>
<td>$1,639</td>
<td>$1,934</td>
</tr>
<tr>
<td>General Commercial</td>
<td>1,000 sf</td>
<td>$3,059</td>
<td>$3,465</td>
</tr>
<tr>
<td>Convenience Comm.</td>
<td>1,000 sf</td>
<td>$3,826</td>
<td>$4,585</td>
</tr>
<tr>
<td>Office</td>
<td>1,000 sf</td>
<td>$997</td>
<td>$1,273</td>
</tr>
<tr>
<td>Public/Institution</td>
<td>1,000 sf</td>
<td>$1,091</td>
<td>$1,382</td>
</tr>
<tr>
<td>Industrial</td>
<td>1,000 sf</td>
<td>$1,771</td>
<td>$2,087</td>
</tr>
<tr>
<td>Warehouse</td>
<td>1,000 sf</td>
<td>$816</td>
<td>$977</td>
</tr>
<tr>
<td>Mini Warehouse</td>
<td>1,000 sf</td>
<td>$122</td>
<td>$187</td>
</tr>
</tbody>
</table>

Source: Current fees from Table 1; updated fees from Table 17.

For three land use categories in the 10-mill PID, the upfront fee is going to $0. This corrects an error that was made in the 2015 fee adjustment. These upfront fees were $0 in the 2012 resolution, but the present values of future PID taxes were higher than the total fee amounts for these land uses. The error in the 2015 adjustment was to assume that PID taxes exactly covered the total fee amount, and that any increase in the total fee should be reflected in the upfront fee for the 10-mill PID. No developments of this kind have occurred in the 10-mill PID since the fees were implemented.
LEGAL FRAMEWORK

Impact fees are a way for local governments to require new developments to pay a proportionate share of the infrastructure costs they impose on the community. In contrast to “negotiated” developer exactions, impact fees are charges assessed on new development using a standard formula based on objective characteristics, such as the number and type of dwelling units constructed. The fees are a one-time, up-front charge, with the payment made at the time of building permit issuance. Impact fees require that each new development project pay a pro-rata share of the cost of new capital facilities required to serve that development.

Since impact fees were pioneered in states that lacked specific enabling legislation, such fees have generally been legally defended as an exercise of local government’s broad “police power” to regulate land development in order to protect the health, safety and welfare of the community. The courts have developed guidelines for constitutionally-valid impact fees, based on the “dual rational nexus” standard. The standard essentially requires that fees must be proportional to the need for additional infrastructure created by the new development, and the fees must be spent to provide that same type of infrastructure to benefit the new development.

State Statutes

Prior to 2001, the authority of counties in Colorado to impose impact fees was not entirely clear. Several counties had adopted impact fees, which they felt were authorized under counties’ implied powers. This uncertainty was removed with the passage of SB 15 by the Legislature and its signature by the governor on November 16, 2001. Among other things, this bill created a new Section 104.5: Impact Fees, in Article 20 of Title 29, Colorado Revised Statutes, which specifically provides that:

_Pursuant to the authority granted in section 29-20-104 (1) (g) and as a condition of issuance of a development permit, a local government may impose an impact fee or other similar development charge to fund expenditures by such local government on capital facilities needed to serve new development._

Section 29-20-104.5(1) requires that impact fees be based on a schedule of fees that is legislatively adopted, applies to development generally, as opposed to an individual development project, and only covers the cost of capital improvements needed to serve new development:

_No impact fee or other similar development charge shall be imposed except pursuant to a schedule that is:_

(a) legislatively adopted;
(b) generally applicable to a broad class of property; and
(c) intended to defray the project impacts on capital facilities caused by proposed development.

Section 29-20-104.5(2) requires the preparation of a report that quantifies the cost attributable to new development and ensures that new development is not charged for the cost to remedy existing deficiencies:
A local government shall quantify the reasonable impacts of proposed development on existing capital facilities and establish the impact fee or development charge at a level no greater than necessary to defray such impacts directly related to proposed development. No impact fee or other similar development charge shall be imposed to remedy any deficiency in capital facilities that exists without regard to the proposed development.

Section 29-20-104.5(3) provides that credit against impact fees must be given for required developer contributions of land or improvements for the same facilities for which the impact fees are charged:

Any schedule of impact fees or other similar development charges adopted by a local government pursuant to this section shall include provisions to ensure that no individual landowner is required to provide any site specific dedication or improvement to meet the same need for capital facilities for which the impact fee or other similar development charge is imposed.

Impact fees may be imposed for a broad range of facilities. Section 29-20-104.5(4) provides that impact fees can be imposed to “defray the projected impacts on capital facilities caused by proposed development.” It defines “capital facility” to mean any improvement or facility that:

(a) is directly related to any service that a local government is authorized to provide;
(b) has an estimated useful life of five years or longer; and
(c) is required by the charter or general policy of a local government pursuant to a resolution or ordinance.

Section 29-20-104.5(5) requires that impact fees collected must be earmarked and spent for the same types of improvements for which they were collected, and also authorizes waivers for affordable housing:

Any impact fee or other similar development charge shall be collected and accounted for in accordance with part 8 of Article 1 of this title. Notwithstanding the provisions of this section, a local government may waive an impact fee or other similar development charge on the development of low- or moderate-income housing or affordable employee housing as defined by the local government.

The statutory provision referenced above (Section 29-1-803) requires separate accounting for each type of fee, and requires that interest earned on each account be retained in that account:

Except as otherwise provided in this section, all moneys from land development charges collected, including any such moneys collected but not expended prior to January 1, 1991, shall be deposited or, if collected for another local government, transmitted for deposit, in an interest-bearing account which clearly identifies the category, account, or fund of capital expenditure for which such charge was imposed. Each such category, account, or fund shall be accounted for separately. The determination as to whether the accounting requirement shall be by category, account, or fund and by aggregate or individual land development shall be within the discretion of the local government. Any interest or other income earned on moneys deposited in said interest-bearing account shall be credited to the account.
Constitutional Requirements

While State law provides a broad grant of authority, impact fees must also comply with constitutional standards that have been developed by the courts to ensure that local governments do not abuse their power to regulate the development of land. The courts have gradually developed guidelines for constitutionally-valid impact fees, based on a “rational nexus” that must exist between the regulatory fee or exaction and the activity that is being regulated. The standards set by court cases generally require that an impact fee meet a two-part test:

1) The fees must be proportional to the need for new facilities created by new development (the “needs test”); and

2) The expenditure of impact fee revenues must provide benefit to the fee-paying development (the “benefit test”).

The “needs test” requires that impact fees for various types of developments should be proportional to the impact of each development on the need to construct additional or expanded facilities. The fees do not have to recover the full cost, but if the fees are reduced by a percentage from the full cost, the percentage reduction should apply evenly to all types of developments. This requirement is echoed in the requirements in the Colorado act that impact fees be “intended to defray the projected impacts on capital facilities caused by proposed development” and “be generally applicable to a broad class of property.”

The “benefit test” requires that impact fees be spent to provide benefit to new development. Benefit is ensured by providing that the funds be earmarked for capacity-expanding improvements of the type for which the fees are collected. The Colorado act requires this type of earmarking. Additional methods of ensuring benefit are to require that the fees be refunded if they have not been used within a reasonable period of time, or to earmark the funds collected within a geographic subarea be spent within the same geographic subarea.

A fundamental principle of impact fees, rooted in both case law and norms of equity, is that impact fees should not charge new development for a higher level of service than is provided to existing development. This principle, which is a critical part of the “needs test,” is reflected in the Colorado impact fee statute’s prohibition against using impact fee funds to remedy existing deficiencies (Section 29-20-104.5(2)). In addition, impact fees must generally be reduced to ensure that new development does not pay twice for the same level of service, once through impact fees and again through general taxes that are used to remedy the capacity deficiency for existing development.

A corollary principle is that new development should not have to pay twice for the same level of service. As noted above, the fees should be reduced by a credit that accounts for the contribution of new development toward remedying the existing deficiencies. A similar situation arises when the existing level of service has not been fully paid for. Outstanding debt on existing facilities that are counted in the existing level of service will be retired, in part, by revenues generated from new development. To avoid requiring new development to pay more than its proportional share, impact fees should be reduced to account for future tax payments that will retire outstanding debt on existing facilities.
In addition, new development should receive reimbursement or credit against the fees for developer contributions of right-of-way, actual construction, or monetary payments related to the completion of the improvements on which the impact fees are based. The fees should also be reduced to account for future dedicated revenues, such as sales taxes or motor fuel taxes, that will be used to fund a portion of the cost of the improvements. However, credit is not required for discretionary County funding that may be used to help pay for growth-related, capacity-expanding improvements. While new development may contribute toward such funding, so does existing development, and both existing and new development benefit from the higher level of service that the additional funding makes possible.
In an impact fee system, it is important to clearly define the geographic areas within which impact fees will be collected and spent. There are two types of geographic areas that serve different functions in an impact fee system: assessment districts and benefit districts. An assessment district is a geographic area that is subject to a uniform fee schedule. Benefit districts, on the other hand, represent areas within which the collected fees must be spent. Benefit districts ensure that improvements funded by impact fees are constructed within reasonable proximity of the fee-paying developments.

Assessment Districts

The County’s road impact fee is charged to new development in the unincorporated areas of the county. The County currently uses a single fee schedule that applies uniformly throughout the unincorporated area, which is illustrated in Figure 1.
Figure 1. El Paso County Map

Benefit Districts

The fee revenues can be spent anywhere in the unincorporated area. While the County had initially considered dividing the unincorporated area into several benefit districts, the County has opted for a single benefit district encompassing the entire unincorporated area. There were several reasons for this decision.

First, the fee program is focused primarily on arterial roadways, which account for 84% of net program improvement costs. The function of arterials is to move traffic long distances. The arterial road system forms an integrated network, and any attempt to draw lines to divide it into subareas would inevitably be somewhat artificial. Larimer County, for example, which is somewhat larger than El Paso County, has a single county-wide benefit district for regional roads, which are comparable to the types of roads covered by El Paso County’s fee program.
Second, the creation of multiple benefit districts would increase the complexity of the system. For example, it would likely necessitate establishing a separate Public Improvement District (PID) for each benefit district. It would also increase the administrative burden of tracking and accounting fee collections and expenditures.

Third, a county-wide benefit district would essentially be self-regulating in terms of matching the geographic location of need and benefit. Because the fee program primarily functions to reimburse those who make needed improvements, the expenditures will tend to go to the areas where development is occurring.

Fourth, multiple benefit districts would unnecessarily restrict the use of impact fee funds, making it more difficult to accumulate sufficient funds to make improvements or provide reimbursements.
METHODOLOGY

This section describes the methodology used to develop and update El Paso County’s road impact fees.

Plan-Based Approach

The road impact fees are calculated using a “plan-based” methodology. The plan-based approach uses a travel demand model to forecast future traffic volumes, which are then compared to existing roadway capacities to identify needed improvements. The portion of the total cost of those improvements that is attributable to growth (after deductions for adjacent developer responsibility, through trips and existing deficiencies) is divided by the number of new trips over the planning period to determine a cost per trip.

Improvements included in the fee program have been identified in the most recently adopted Major Transportation Corridors Plan (MTCP). This transportation plan identifies improvements needed to accommodate anticipated growth in the unincorporated area over the 2016-2040 period based on small-area growth forecasts.

Types of Improvements

This program covers major corridors that provide regional travel. The program does not include all roads, only County arterials and major rural collectors, as well as a few selected State roads (“major roads”) within unincorporated El Paso County. Only capacity-expanding improvements to major roads identified in the MTCP are included. Types of eligible improvements include construction of new roads, widening existing roads, paving gravel roads, intersection improvements and signalization, as well as acquisition of additional rights-of-way (ROW) required for such improvements. Intersection improvements and signalization improvements included in the program are limited to the intersection of two major roads. The specific improvements that can be funded by the fee program, or for which credits or reimbursements may be provided, are identified in Table 20 and Table 21 in the Appendix. The list of eligible projects, costs and fee amounts will be updated over time with input from the stakeholder committee and approval by the Board of County Commissioners.

Standardized Unit Costs

The fee program uses a standardized unit cost approach. The same costs used to calculate the fees are also used to determine the amount of credit or reimbursement due for eligible improvements. In order for an eligible road to qualify for a credit or a reimbursement, all aspects of the road must be constructed to County standards and be accepted by the County. The standardized unit costs are summarized in Table 4 below.

The construction costs for segment and intersection improvements are estimated using standard costs per linear foot of segment or per intersection leg, based on unit costs for a limited number of components, including asphalt, curb & gutter/shoulders, earthwork and construction management. The component unit costs developed by the stakeholders are intended to be conservative and are not intended to fully cover all actual costs. Certain cost components, such as utility relocation, were
purposely omitted because they are extremely variable. Intersection costs are calculated as the additional cost beyond the cost of the standard road segment. Intersection costs include both additional construction and additional right-of-way.

Right-of-way (ROW) costs are estimated based on the number of acres required and a standard, county-wide cost per acre. While construction and ROW costs are lumped together in the segment and intersection unit costs shown below, developers will receive credit separately for linear feet constructed and ROW dedicated. Signal costs (for State road intersections only) are estimated and credited based on the number of needed signals and a standard cost per signal based on the Colorado Department of Transportation’s (CDOT) escrow requirement.

The fee amount includes 63 as-yet unidentified Eligible Intersection Improvements. Eligible Intersection Improvements shall be identified as set forth in Appendix 2. The unit cost for a traffic control signal is $350,000 and the unit cost for a roundabout is $700,000. The unit cost for Eligible Intersection Improvements does not include any turn lanes, pavement, or curb and gutter. The pavement, turn lanes, and curb and gutter at intersections are included in the unit costs for Eligible Improvement legs and linear feet.

Table 4. Summary of Standardized Unit Costs

<table>
<thead>
<tr>
<th>Improvement Type</th>
<th>Unit</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Segment Improvements:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural Road Paving</td>
<td>Linear Foot</td>
<td>$62.16</td>
</tr>
<tr>
<td>Rural Road Upgrade</td>
<td>Linear Foot</td>
<td>$188.30</td>
</tr>
<tr>
<td>Rural Minor Collector</td>
<td>Linear Foot</td>
<td>$173.34</td>
</tr>
<tr>
<td>Rural Minor Arterial</td>
<td>Linear Foot</td>
<td>$230.49</td>
</tr>
<tr>
<td>Urban Nonresidential Collector</td>
<td>Linear Foot</td>
<td>$247.56</td>
</tr>
<tr>
<td>Urban Minor Arterial</td>
<td>Linear Foot</td>
<td>$341.82</td>
</tr>
<tr>
<td>Urban Principal Arterial (4 lane)</td>
<td>Linear Foot</td>
<td>$495.84</td>
</tr>
<tr>
<td>Urban Principal Arterial (6 lane)</td>
<td>Linear Foot</td>
<td>$674.34</td>
</tr>
<tr>
<td>Urban Expressway (4 lane)</td>
<td>Linear Foot</td>
<td>$538.85</td>
</tr>
<tr>
<td>Urban Expressway (6 lane)</td>
<td>Linear Foot</td>
<td>$674.34</td>
</tr>
<tr>
<td>Rural Principal Arterial (4 lane)</td>
<td>Linear Foot</td>
<td>$484.02</td>
</tr>
<tr>
<td>Rural Principal Arterial (6 lane)</td>
<td>Linear Foot</td>
<td>$746.66</td>
</tr>
<tr>
<td>Rural Expressway (4 lane)</td>
<td>Linear Foot</td>
<td>$504.46</td>
</tr>
<tr>
<td>Rural Expressway (6 lane)</td>
<td>Linear Foot</td>
<td>$688.94</td>
</tr>
<tr>
<td>State Road, Type A (4 lane divided)</td>
<td>Linear Foot</td>
<td>$437.67</td>
</tr>
<tr>
<td>State Road, Type AA (6 lane divided)</td>
<td>Linear Foot</td>
<td>$700.23</td>
</tr>
<tr>
<td><strong>Intersection Improvements:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban Minor Arterial (4 lane)</td>
<td>Intersection Leg</td>
<td>$15,032</td>
</tr>
<tr>
<td>Urban Principal Arterial (4 lane)</td>
<td>Intersection Leg</td>
<td>$76,355</td>
</tr>
<tr>
<td>Urban Principal Arterial (6 lane)</td>
<td>Intersection Leg</td>
<td>$121,030</td>
</tr>
<tr>
<td>Traffic Signal on State Road</td>
<td>Each</td>
<td>$350,000</td>
</tr>
</tbody>
</table>

**Note:** Costs shown include ROW costs.

**Source:** Segment improvement cost per linear foot from Table 18 in Appendix; intersection costs per leg from Table 19 in Appendix; unit costs for rural road paving and upgrades from Duncan Associates/LSA Associates, Major Transportation Corridors Plan: Road Impact Fee Study, November 2012, Table 2, increased by a cost inflation factor of 9.4%, as recommended by the Oversizing and Reimbursement Committee, June 7, 2016; signal cost is CDOT signal escrow requirement.
Excluded Costs

The costs included in the fee calculations are less than the total costs of the needed improvements. As noted above, only certain cost components will be included in the fee calculations, and those costs will be based on standardized costs that will likely understate the actual costs of improvements. In addition, any portions of project costs that are attributable to remedying existing deficiencies, or accommodating future pass-through traffic that is unrelated to development in the unincorporated area, are excluded from the fee calculations.
Travel Demand Model

One of the key technical tools in preparing the 2040 Major Transportation Corridors Plan (MTCP) on which the updated fees are based is the travel demand forecasting model. The model predicts future travel patterns and volumes based on travel demand (i.e., trip-making) generated by socioeconomic data on the number of households and employees for small areas. The resulting travel is assigned to the roadway network to project future traffic volumes on each roadway segment. These growth scenarios are based on the official Small Area Forecasts developed by the Pikes Peak Area Council of Governments (PPACG) in 2013 for the 2040 Moving Forward Plan, the regional transportation plan approved in 2015. These base forecasts, which were recently completed and involved an extensive input process from regional planning entities, were adjusted and refined through additional data gathering and review for the MTCP, while still maintaining base year (2010) and 2040 control totals at the regional level.

Using the model, analysis was performed to determine where future traffic volumes will exceed available roadway capacity, and several alternative transportation improvements were tested to evaluate the benefits of adding roadway capacity. Modeling of the existing major road network, including improvements that have committed funding but are not yet completed, reveals the existence of some existing capacity deficiencies. These are shown as “congested” in Figure 2.

**Figure 2. Existing Deficiencies, 2016**
Modeling of future 2040 volumes based on the socioeconomic forecasts and the existing and committed network reveals a substantial increase in congestion in the absence of additional road improvements. The future levels of service are illustrated in Figure 3.

**Figure 3. Future Deficiencies without Improvements, 2040**
Using a planned-based methodology as described in the previous section, the portion of the total cost of planned improvements needed over the planning horizon (2016-2040) that is attributable to growth within the unincorporated county is divided by the total trip ends that will be generated by new development in the unincorporated county to determine the cost per trip. The costs used in the fee calculations are not estimated actual costs, but rather standardized unit costs for various types of improvements that exclude some components.

The costs that are attributable to new development in the unincorporated area exclude (1) costs attributed to existing deficiencies, and (2) costs attributable to pass-through traffic. Existing deficiency costs were identified for projects where existing traffic volumes exceed existing roadway capacities. The deficiency is determined to be a percentage of the project cost, based on the following formula: \((\text{2016 volume} – \text{2016 capacity}) ÷ (\text{2040 volume} – \text{2016 capacity})\). In addition, some costs are attributable to growth in trips that is unrelated to new development in the unincorporated area. Modeling was performed to determine the number of existing and future trips that are “pass-through” - that is, they do not have an origin or destination in the unincorporated area. The percentage of project costs attributable to pass-through traffic was based on model analysis of 2040 conditions.

**Planned Improvement Costs**

Based on the modeling described in the previous section, as well as public and stakeholder input, a set of roadway improvement projects was identified as necessary to accommodate anticipated growth over the 2016-2040 planning horizon. The locations of the improvements are illustrated in Figure 4 below.

Improvement project costs include roadway segment improvements, intersection improvements associated with those segments, and signals that will need to be installed at intersections of State roads associated with those improvements. The costs of the planned improvements are summarized in Table 5, based on detailed information for each improvement and standardized unit costs included in the Appendix. Intersection and signal costs are included, and non-growth-related costs attributable to existing deficiencies and pass-through traffic are excluded. Total net improvement costs also include outstanding credit reimbursements for improvements constructed prior to the ordinance that will be reimbursed through the fee program, as well as the cost of transportation plan and fee study updates that will need to be done over the next 24 years to keep the program abreast of changing conditions.
### Table 5. Summary of Planned Improvement Costs, 2016-2040

<table>
<thead>
<tr>
<th>Improvement Type</th>
<th>Miles</th>
<th>Segment Cost</th>
<th>Intersect./ Signals</th>
<th>Less Deficiencies</th>
<th>Less Through Trips</th>
<th>Net Program Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Arterials</td>
<td>37.39</td>
<td>$102,416,675</td>
<td>$2,404,442</td>
<td>-$1,055,985</td>
<td>-$10,417,757</td>
<td>$93,347,375</td>
</tr>
<tr>
<td>New County Road Connections</td>
<td>24.58</td>
<td>$50,858,865</td>
<td>$943,934</td>
<td>$0</td>
<td>-$2,266,866</td>
<td>$49,535,993</td>
</tr>
<tr>
<td>County Rural Road Upgrades</td>
<td>71.61</td>
<td>$71,199,012</td>
<td>$1,273,443</td>
<td>$0</td>
<td>-$3,884,850</td>
<td>$68,587,605</td>
</tr>
<tr>
<td>County Rural Road Paving</td>
<td>49.82</td>
<td>$16,349,850</td>
<td>$0</td>
<td>-$921,505</td>
<td>-$1,904,760</td>
<td>$13,523,585</td>
</tr>
<tr>
<td>Subtotal, County Road Projects</td>
<td>183.39</td>
<td>$240,824,402</td>
<td>$4,621,819</td>
<td>-$1,977,490</td>
<td>-$18,474,233</td>
<td>$224,994,498</td>
</tr>
<tr>
<td>State Road Projects</td>
<td>15.08</td>
<td>$42,147,756</td>
<td>$3,934,230</td>
<td>-$614,121</td>
<td>-$6,264,824</td>
<td>$39,203,041</td>
</tr>
<tr>
<td>Total Planned Improvements</td>
<td>198.47</td>
<td>$282,972,158</td>
<td>$8,556,049</td>
<td>-$2,591,611</td>
<td>-$24,739,057</td>
<td>$264,197,539</td>
</tr>
<tr>
<td>Outstanding Pre-Ordinance...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$8,693,554</td>
</tr>
<tr>
<td>Cost of Transportation Plan...</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$1,920,000</td>
</tr>
<tr>
<td>Total Improvement Costs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$274,811,093</td>
</tr>
</tbody>
</table>

Source: Miles from Table 20 in Appendix; costs, deficiencies and through trip reductions from Table 22; outstanding reimbursement credits from Table 24; plan/study update costs based on 4.8 (24 years ÷ 5 years between updates) at $400,000 each.

### Figure 4. Planned Improvements, 2016-2040
New Trips

In a plan-based impact fee methodology, the total cost of planned improvements attributed to growth over the planning horizon is divided by new trips anticipated to occur over the same period. Since costs attributed to pass-through traffic have been excluded from the program costs, only new trips generated by development in the unincorporated area are considered. Each trip has two trip ends – an origin and a destination. While this report sometimes uses the term “trips,” generally what is meant by that is trip ends. The trip generation data provided by the Institute for Transportation Engineers *Trip Generation Manual* are trip ends. Trips with both an origin and destination in the unincorporated area have two trip ends in the unincorporated area, while other types of trips related to development in the unincorporated area only have one trip end in the unincorporated area.

Ideally, the fee calculations would divide needed improvements over the 2016-2040 period by new trips over the same 24-year period. However, estimating total trips attributable to development in the entire unincorporated area requires reliance on the travel demand model, and the base year for the model is 2010. Consequently, the fee calculations will divide the cost of improvements needed over 24 years by the new trips generated over 30 years, resulting in somewhat lower fees than would be the case if the model base year was more current.

The new trip ends that will be generated by development in the unincorporated area over the 2010-2040 period total 824,255, as shown in Table 6. However, some of those trips will be generated by development in the Woodmen Road, Central Marksheffel, Constitution and Lorson Ranch developments, which have been deemed to have satisfied their fee obligations. Deducting future trip ends from these developments results in 709,868 net new trip ends.

<table>
<thead>
<tr>
<th>Table 6. Growth in Unincorporated Area Trips, 2010-2040</th>
</tr>
</thead>
<tbody>
<tr>
<td>From</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Unincorp</td>
</tr>
<tr>
<td>Unincorp</td>
</tr>
<tr>
<td>Unincorp</td>
</tr>
<tr>
<td>Unincorp</td>
</tr>
<tr>
<td>Incorp</td>
</tr>
<tr>
<td>Teller</td>
</tr>
<tr>
<td>External</td>
</tr>
<tr>
<td>Total Unincorporated Area</td>
</tr>
<tr>
<td>~ New Trip Ends from Developments with Satisfied Fee Obligations</td>
</tr>
<tr>
<td>Net New Trip Ends, 2010-2040</td>
</tr>
</tbody>
</table>

Source: Felsburg Holt & Ullevig, data from Major Transportation Corridors Plan analysis, October 4, 2016.
Cost per Trip

Dividing total growth-related costs by the growth in trip ends from new development in the unincorporated area yields a cost of $387.13 per trip end, as shown in Table 7. In addition, the steering committee agreed during the 2012 study that a 5% contingency should be added to program costs to address unexpected situations as well as the difference between fee program unit costs and actual costs that will be incurred by the County in constructing improvements where no developer is available to make a needed improvement. With the addition of those contingency costs, the total cost is $406.49 per trip end.

Table 7. Cost per Trip

See the Implementation Document 2018 for the most current cost per trip.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Growth-Related Costs, 2016-2040</td>
<td>$274,811,093</td>
</tr>
<tr>
<td>+ Total New Trip Ends, 2010-2040</td>
<td>709,868</td>
</tr>
<tr>
<td>Cost per Trip End</td>
<td>$387.13</td>
</tr>
<tr>
<td>Plus 5% Contingency for Actual County Costs</td>
<td>$19.36</td>
</tr>
<tr>
<td>Total Cost per Trip End</td>
<td>$406.49</td>
</tr>
</tbody>
</table>

Source: Total costs from Table 5; new trip ends from Table 6; contingencies added based on 2012 recommendation of steering committee.
As discussed in the legal framework section, credit against the road impact fees should be provided for future revenue that will be generated by new development and used to help pay for outstanding debt on existing facilities or to remedy existing capacity deficiencies. In addition, credit can be provided for future dedicated funding or anticipated outside funding that can be used to fund roadway capacity improvements. These are referred to as “revenue credits,” and are the focus of this section. Credits or reimbursements should also be provided to those who construct eligible improvements that are included in the list of planned improvements on which the fees are based. These are referred to as “developer credits,” and are calculated on a case-by-case basis.

El Paso County has not historically used bonding to pay for roadway improvements, and does not have any outstanding debt from past roadway improvements. Some outside funding is anticipated to be available to help fund some of the improvements identified in this report, and a credit for such funding is provided in this section.

It should be noted that costs attributable to remedying existing capacity deficiencies have been excluded from the fee calculations. However, a credit for deficiencies is still warranted, because new development will help fund the deficiency correction. A relatively simple approach to calculating an appropriate credit is to divide the total cost of existing deficiencies by the number of existing trips to determine a credit per trip. This puts new development on equal footing with existing development. Dividing the total cost to remedy existing deficiencies by total existing trip ends in El Paso County yields a deficiency credit of $3.40 per trip end.

As noted above, credit should also be provided for anticipated outside funding. Some funding from the county-wide Pikes Peak Rural Transportation Authority sales tax and from State and Federal highway funds is anticipated to be programmed for some of the major road capacity improvements identified in this study. Fee program projects included in the “A” list in the fiscally-constrained project list of the Pikes Peak Area Council of Governments (PPACG)’s 2040 Regional Transportation Plan are identified in Table 9 below, along with one typical “B” list project. In recent years no projects from the “B” list have received funding, but some funding was assumed to

### Table 8. Deficiency Credit per Trip

<table>
<thead>
<tr>
<th>Corridor</th>
<th>From</th>
<th>To</th>
<th>Program Cost</th>
<th>% Defic.</th>
<th>Deficiency Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academy Blvd</td>
<td>I-25</td>
<td>Bradley Rd</td>
<td>$2,823,489</td>
<td>37.4%</td>
<td>$1,055,985</td>
</tr>
<tr>
<td>Black Forest Rd</td>
<td>Walker Rd</td>
<td>County Line Rd</td>
<td>$804,430</td>
<td>100.0%</td>
<td>$804,430</td>
</tr>
<tr>
<td>Harrisville Rd</td>
<td>Blasingame Rd</td>
<td>Ramah Hwy</td>
<td>$659,035</td>
<td>11.1%</td>
<td>$73,153</td>
</tr>
<tr>
<td>Blaney Rd S</td>
<td>Meridan Rd</td>
<td>Hoofbeat Rd</td>
<td>$463,097</td>
<td>0.8%</td>
<td>$3,705</td>
</tr>
<tr>
<td>Log Rd</td>
<td>90 degree bend</td>
<td>SH 94</td>
<td>$638,358</td>
<td>6.3%</td>
<td>$40,217</td>
</tr>
<tr>
<td>US 24</td>
<td>31st St</td>
<td>Manitou Interchg</td>
<td>$2,456,484</td>
<td>25.0%</td>
<td>$614,121</td>
</tr>
<tr>
<td>Total Deficiency Cost</td>
<td></td>
<td></td>
<td>$2,591,611</td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Existing Unincorporated Area Trip Ends</td>
<td></td>
<td></td>
<td>761,470</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deficiency Credit per Trip End</td>
<td></td>
<td></td>
<td></td>
<td>$3.40</td>
<td></td>
</tr>
</tbody>
</table>

Source: Program costs and deficiency percentages from Table 21 and Table 22 in the Appendix; existing unincorporated area trip ends (for 2010 base year) from Table 6.
be conservative. The credit is calculated as the net present value of revenue generated per unincorporated area trip end over the next 25 years (the period covered by the regional plan).
Table 9. Outside Funding Credit

<table>
<thead>
<tr>
<th>Road Name</th>
<th>From</th>
<th>To</th>
<th>Category</th>
<th>Fee Program Net Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hwy 105</td>
<td>Knollwood Rd</td>
<td>US 83</td>
<td>County Arterial</td>
<td>$12,778,258</td>
</tr>
<tr>
<td>Monument Hill</td>
<td>Woodmoor</td>
<td>County Line Road</td>
<td>Rural Road Upgrade</td>
<td>$566,575</td>
</tr>
<tr>
<td>Deer Creek</td>
<td>Monument Hill</td>
<td>Woodmoor</td>
<td>Rural Road Upgrade</td>
<td>$96,996</td>
</tr>
<tr>
<td>Eastonville</td>
<td>McLaughlin</td>
<td>Latigo</td>
<td>Rural Road Upgrade</td>
<td>$5,556,198</td>
</tr>
<tr>
<td>Beacon Lite</td>
<td>Hwy 105</td>
<td>County Line Road</td>
<td>Rural Road Upgrade</td>
<td>$1,779,247</td>
</tr>
<tr>
<td>Mesa Ridge</td>
<td>Powers</td>
<td>Markshefle</td>
<td>New County Connection</td>
<td>$2,146,004</td>
</tr>
<tr>
<td>Acadmemy</td>
<td>I 15</td>
<td>Bradley Rd</td>
<td>County Arterial</td>
<td>$1,146,336</td>
</tr>
<tr>
<td>US 24</td>
<td>Garrett Rd</td>
<td>Woodmen</td>
<td>State Road</td>
<td>$8,912,033</td>
</tr>
<tr>
<td>Intersection Projects Overlapping with Fee Program</td>
<td></td>
<td></td>
<td></td>
<td>$1,512,488</td>
</tr>
<tr>
<td>PPRTA &quot;B&quot; List Average Project</td>
<td></td>
<td></td>
<td></td>
<td>$6,720,000</td>
</tr>
<tr>
<td>Total Fee Program Net Cost with PPRTA/CDOT Funding</td>
<td></td>
<td></td>
<td></td>
<td>$41,214,135</td>
</tr>
<tr>
<td>* Years Covered by 2040 Regional Transportation Plan</td>
<td></td>
<td></td>
<td></td>
<td>25</td>
</tr>
<tr>
<td>Annual PPRTA/CDOT Funding for Fee Program Projects</td>
<td></td>
<td></td>
<td></td>
<td>$1,648,565</td>
</tr>
<tr>
<td>* Existing Unincorporated Area Trip Ends</td>
<td></td>
<td></td>
<td></td>
<td>761,470</td>
</tr>
<tr>
<td>Annual PPRTA/CDOT Funding for Fee Program Projects per Trip End</td>
<td></td>
<td></td>
<td></td>
<td>$2.16</td>
</tr>
<tr>
<td>x Present Value Factor (25 Years)</td>
<td></td>
<td></td>
<td></td>
<td>16.48</td>
</tr>
<tr>
<td>Outside Funding Credit per Trip End</td>
<td></td>
<td></td>
<td></td>
<td>$35.60</td>
</tr>
</tbody>
</table>

* the fee program cost has been multiplied by a factor of 2.2 miles/3.358 miles, which is the portion of the fee program project that is addressed by the PPRTA project.

Source: Fee program net costs from Table 22 in the Appendix for planned projects that have anticipated outside funding in the PPACG 2040 Regional Transportation Plan fiscally-constrained project list; existing unincorporated area trip ends from Table 6; net present value factor based on discount rate of 3.5%, the average bank prime loan interest rate in September 2016 from the Federal Reserve.

Subtracting the deficiency and outside funding credits from the cost results in a net cost of $367.49 per trip end, as shown in Table 10.

Table 10. Net Cost per Trip

| Cost per Trip End | $406.49 |
| - Deficiency Credit per Trip End | -$3.40 |
| - Outside Funding Credit per Trip End | -$35.60 |
| Net Cost per Trip End | $367.49 |

Source: Cost per trip end from Table 7; deficiency credit from Table 8; outside funding credit from Table 9.
**TRAVEL DEMAND**

To determine road impact fees for individual land use categories, the travel demand associated with a unit of development (dwelling unit, 1,000 square feet of nonresidential development, etc.) must be determined. For this study, travel demand is expressed in terms of daily trip ends, adjusted to account for pass-by and diverted-linked trips, as well as average trip length by trip purpose. Trip characteristics are drawn from national data, and calibrated to ensure that they reflect local travel demand.

**Trip Characteristics**

The travel demand generated by specific land use types in El Paso County is a product of four factors: 1) trip generation, 2) percent new trips, 3) average trip length and 4) a local adjustment factor to calibrate national travel characteristics to reflect local travel demand.

**Trip Generation**

Trip generation rates are based on information published in the most recent edition of the Institute of Transportation Engineers' (ITE) *Trip Generation* manual. Trip generation rates represent trip ends, or driveway crossings at the site of a land use. Thus, a single one-way trip from home to work counts as one trip end for the residence and one trip end for the work place, for a total of two trip ends.

**New Trip Factor**

Trip rates must be adjusted by a “new trip factor” to exclude pass-by and diverted-linked trips. This adjustment is intended to reduce the possibility of over-counting by only including primary trips generated by the development. Pass-by trips are those trips that are already on a route for a different primary purpose and simply stop at a development on that route. For example, a stop at a convenience store on the way home from the office is a pass-by trip for the convenience store. A pass by trip does not create an additional burden on the street system and therefore should not be counted in the assessment of impact fees. A diverted-linked trip is similar to a pass-by trip, but a diversion is made from the regular route to make an interim stop. The reduction for pass-by and diverted-linked trips was drawn from ITE and other published information.

The trip generation rates for general commercial and convenience commercial categories are reduced to account for pass-by and diverted trips. General commercial trip rates are based on shopping centers, and new trip data for shopping centers are quite robust. Of the 100 shopping center studies listed in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 60 have information on both pass-by and diverted trips. The average new trip percentage is 42%, excluding all pass-by and diverted trips. Convenience commercial uses are discussed below.
Trip Length Factors

In addition to the number of new trips generated, the length of those trips also affects the impact of a trip, and trip lengths vary between land uses. Average trip lengths are not used directly, but instead are used to develop trip length adjustment factors. The trip length factors are derived from the U.S. Department of Transportation’s 2009 National Household Travel Survey (NHTS), and are shown in Table 11.

<table>
<thead>
<tr>
<th>Fee Program Land Use Category</th>
<th>NHTS Trip Purpose</th>
<th>Avg. Trip Length (mi.)</th>
<th>Adjustment Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family</td>
<td>Single-Family</td>
<td>9.16</td>
<td>0.99</td>
</tr>
<tr>
<td>Multi-Family</td>
<td>Multi-Family</td>
<td>8.30</td>
<td>0.89</td>
</tr>
<tr>
<td>Hotel/Motel</td>
<td>Average</td>
<td>9.28</td>
<td>1.00</td>
</tr>
<tr>
<td>Commercial/Retail</td>
<td>Shopping</td>
<td>6.27</td>
<td>0.68</td>
</tr>
<tr>
<td>Convenience Commercial</td>
<td>n/a*</td>
<td>1.52</td>
<td>0.16</td>
</tr>
<tr>
<td>Office</td>
<td>Family/Personal</td>
<td>6.61</td>
<td>0.71</td>
</tr>
<tr>
<td>Public/Institutional</td>
<td>School/Church</td>
<td>8.47</td>
<td>0.91</td>
</tr>
<tr>
<td>Industrial</td>
<td>To or From Work</td>
<td>11.98</td>
<td>1.29</td>
</tr>
<tr>
<td>Warehouse</td>
<td>To or From Work</td>
<td>11.98</td>
<td>1.29</td>
</tr>
<tr>
<td>Mini Warehouse</td>
<td>Family/Personal</td>
<td>6.61</td>
<td>0.71</td>
</tr>
<tr>
<td>Average</td>
<td>Average</td>
<td>9.28</td>
<td>1.00</td>
</tr>
</tbody>
</table>

* average trip length from Table 13

Source: National average trip lengths from U.S. Department of Transportation, 2009 National Household Travel Survey; adjustment factor is ratio of trip length for the land use category to the average trip length.

Convenience Commercial Category

The convenience commercial category requires some additional analysis. Average daily trip generation data per 1,000 square feet are available for the following three land use categories: Fast Food with Drive-Thru (ITE 934), Convenience Market (Open 24 Hours) (ITE 851) and Convenience Market with Gasoline Pumps (ITE 853). Average daily trip generation data are also available per fueling position for Convenience Market with Gasoline Pumps (ITE 853), Gasoline/Service Station (ITE 944), and Gasoline/Service Station with Convenience Market (ITE 945). However, since convenience stores with and without gas pumps tend to have very similar trip generation, it would seem to make more sense to base the fees on building square footage.

Data on pass-by and diverted-linked trips are also available for the same three land use categories. Using the same procedure recommended for general commercial, the new trip percentage excludes both pass-by and diverted trips. The number of new trips that would be generated by each of these three land uses is shown in Table 12. Note that all three land uses have reasonably similar new trip generation. To be conservative, the fee will be based on the lowest of the three.

<table>
<thead>
<tr>
<th>ITE Code</th>
<th>Land Use Description</th>
<th>Daily Trip Rate</th>
<th>% New</th>
<th>New Trips</th>
<th>Trips</th>
<th>% New</th>
</tr>
</thead>
<tbody>
<tr>
<td>934</td>
<td>Fast Food w/Drive Thru (1,000 sf)</td>
<td>496.12</td>
<td>29.9%</td>
<td>148.34</td>
<td>21</td>
<td>7</td>
</tr>
<tr>
<td>853</td>
<td>Convenience Market w/Gasoline Pumps (1,000 sf)</td>
<td>845.60</td>
<td>16.2%</td>
<td>136.99</td>
<td>10</td>
<td>15</td>
</tr>
<tr>
<td>851</td>
<td>Convenience Market (Open 24 Hours) (1,000 sf)</td>
<td>737.99</td>
<td>23.9%</td>
<td>176.38</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>
Travel Demand

Source: Trips are average daily trip ends on a weekday from ITE, Trip Generation, 2012; percent new trips from ITE, Trip Generation Handbook, 2004 (excludes pass-by and ½ of diverted-linked trips).

While there are reasonably good national data on trip generation for these uses, there are more limited data on average trip length. However, extensive studies have been done in Florida, and these are summarized in Table 13. Again, to be conservative, the shortest of these average trip lengths will be used.

Table 13. Convenience Commercial Trip Length Characteristics

<table>
<thead>
<tr>
<th>ITE Code</th>
<th>Land Use Description</th>
<th>Avg. Trip Length (mi.)</th>
<th>No. of Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>934</td>
<td>Fast Food w/Drive Thru</td>
<td>2.42</td>
<td>16</td>
</tr>
<tr>
<td>945</td>
<td>Service Station with Convenience Market</td>
<td>1.57</td>
<td>9</td>
</tr>
<tr>
<td>851</td>
<td>Convenience Market (Open 24 Hours)</td>
<td>1.52</td>
<td>9</td>
</tr>
</tbody>
</table>


Based on the foregoing, a “convenience commercial” use, defined as consisting of fast food restaurants with drive-through windows, convenience stores and gasoline service station (with or without convenience retail sales), has been included in the travel demand schedule.

Travel Demand Schedule

The recommended travel demand schedule for the consolidated land use categories is based on national data, calibrated to local conditions. Average daily trip rates and the reduction for commercial retail uses to account for pass-by and diverted-linked trips are multiplied by new trip and trip length factors to determine “adjusted trips.” The “adjusted” trip rates are then multiplied by a calibration factor (described on the following page), to determine “calibrated” trips used in the fee calculations. The recommended travel demand schedule is presented in Table 14.

Table 14. Recommended Travel Demand Schedule

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Unit</th>
<th>Trip Rate</th>
<th>% New</th>
<th>Length Factor</th>
<th>Adj. Trips</th>
<th>Calibration Factor</th>
<th>Calibrated Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Dwelling</td>
<td>9.52</td>
<td>100%</td>
<td>0.99</td>
<td>9.42</td>
<td>1.02</td>
<td>9.61</td>
<td></td>
</tr>
<tr>
<td>Multi-Family Dwelling</td>
<td>6.65</td>
<td>100%</td>
<td>0.89</td>
<td>5.92</td>
<td>1.02</td>
<td>6.04</td>
<td></td>
</tr>
<tr>
<td>Hotel/Motel Room</td>
<td>6.90</td>
<td>100%</td>
<td>1.00</td>
<td>6.90</td>
<td>1.02</td>
<td>7.04</td>
<td></td>
</tr>
<tr>
<td>General Commercial</td>
<td>1,000 sf</td>
<td>42.70</td>
<td>42%</td>
<td>12.20</td>
<td>1.02</td>
<td>12.44</td>
<td></td>
</tr>
<tr>
<td>Convenience Comm.</td>
<td>1,000 sf</td>
<td>845.60</td>
<td>16%</td>
<td>21.65</td>
<td>1.02</td>
<td>22.08</td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>1,000 sf</td>
<td>11.01</td>
<td>100%</td>
<td>7.82</td>
<td>1.02</td>
<td>7.98</td>
<td></td>
</tr>
<tr>
<td>Public/Institutional</td>
<td>1,000 sf</td>
<td>9.11</td>
<td>100%</td>
<td>8.29</td>
<td>1.02</td>
<td>8.46</td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>1,000 sf</td>
<td>6.96</td>
<td>100%</td>
<td>8.98</td>
<td>1.02</td>
<td>9.16</td>
<td></td>
</tr>
<tr>
<td>Warehouse</td>
<td>1,000 sf</td>
<td>3.56</td>
<td>100%</td>
<td>4.59</td>
<td>1.02</td>
<td>4.68</td>
<td></td>
</tr>
<tr>
<td>Mini Warehouse</td>
<td>1,000 sf</td>
<td>2.50</td>
<td>100%</td>
<td>1.78</td>
<td>1.02</td>
<td>1.82</td>
<td></td>
</tr>
</tbody>
</table>

Source: Trip rate (average daily trip ends on a weekday), and percent new trips for shopping centers, from ITE, Trip Generation Manual, 2012; trip length adjustment factor from Table 11; convenience commercial factors from Table 12 and Table 13; adjusted trips is product of trip rate, percent new trips and trip length factor; calibration factor from Table 15; calibrated trips is product of adjusted trips and calibration factor.
Calibration Factor

To calibrate the travel demand schedule, the “expected” number of trips that would be generated using the adjusted trip rates and the model base year (2010) and 2040 socioeconomic forecasts for the unincorporated area are compared to base year and 2040 modeled trips that are attributable to the unincorporated area (i.e., excluding trips that do not have an origin or destination in the unincorporated area). The results are summarized in Table 15.

The first step is to convert retail, service and basic employees to 1,000 sq. ft., using employee density factors. A weighted average of single-family detached and multi-family trip rates is used for the residential trip rate. The general commercial rate is used for retail, office for service, and the average of industrial and warehouse is used for basic land uses.

The calibration factor is the ratio of modeled to expected trips. Calibration factors were developed for 2010, 2040 and new trips expected over the 2010-2040 period. For 2010 and 2040, expected trips derived from “adjusted” trip rates in the travel demand schedule under-predict modeled trips attributed to the unincorporated area. For new trips expected over the 2010-2040 period, the unadjusted travel demand schedule also under-predicts model trips. Consequently, the 2010-2040 calibration factor is applied to the adjusted trips in the travel demand schedule, resulting in a 2% across-the-board increase from the adjusted trip rates in Table 14 above.

<table>
<thead>
<tr>
<th>Table 15. Calibration Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential</td>
</tr>
<tr>
<td>2010 Units/Employees</td>
</tr>
<tr>
<td>2040 Units/Employees</td>
</tr>
<tr>
<td>New Units/Employees</td>
</tr>
<tr>
<td>Employees/1,000 sq. ft.</td>
</tr>
<tr>
<td>2010 Units/1,000 sq. ft.</td>
</tr>
<tr>
<td>2040 Units/1,000 sq. ft.</td>
</tr>
<tr>
<td>New Units/1,000 sq. ft.</td>
</tr>
<tr>
<td>Adjusted Trip Rates</td>
</tr>
<tr>
<td>Expected 2010 Trip Ends</td>
</tr>
<tr>
<td>Expected 2040 Trip Ends</td>
</tr>
<tr>
<td>Expected New Trip Ends</td>
</tr>
<tr>
<td>Modeled 2010 Trip Ends</td>
</tr>
<tr>
<td>Modeled 2040 Trip Ends</td>
</tr>
<tr>
<td>Modeled New Trip Ends</td>
</tr>
<tr>
<td>2010 Calibration Factor</td>
</tr>
<tr>
<td>2040 Calibration Factor</td>
</tr>
<tr>
<td>2010-2040 Calibration Factor</td>
</tr>
</tbody>
</table>

Source: 2010 and 2040 residential units and employees from Felsburg Holt & Ullevig, data from Major Transportation Corridors Plan analysis, September 13, 2016; employees per 1,000 sq. ft. from U.S. Department of Energy, Commercial Buildings Energy Consumption Survey, 2003 (retail includes mall and non-mall, basic is average of industrial and warehouse); adjusted trip rates from Table 14 (residential is weighted 86.6% single-family detached and 13.4% multi-family based on 2010-2014 5-year sample data from the U.S. Census Bureau for unincorporated El Paso County, basic is average of industrial and warehouse); expected trips is product of units/1,000 sq. ft. and adjusted trip rates; modeled trips from Felsburg Holt & Ullevig; calibration factor is ratio of modeled to expected trips.
FEE SCHEDULES

The updated road impact fees for the recommended land use categories calculated in this study are presented in Table 16 for properties not located in a PID. The impact fee calculation for each land use category is the product of daily trip ends per development unit and the net cost per trip end.

Table 16. Road Impact Fee Schedule (Not in PID)
See the Implementation Document 2018 for the most current fee schedule.

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Unit</th>
<th>Trips</th>
<th>Net Cost per Trip</th>
<th>Fee per Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Dwelling</td>
<td>6.04</td>
<td>$367.49</td>
<td>$2,220</td>
<td></td>
</tr>
<tr>
<td>Multi-Family Dwelling</td>
<td>7.04</td>
<td>$367.49</td>
<td>$2,587</td>
<td></td>
</tr>
<tr>
<td>Hotel/Motel Room</td>
<td>7.04</td>
<td>$367.49</td>
<td>$2,587</td>
<td></td>
</tr>
<tr>
<td>General Commercial</td>
<td>1,000 sf</td>
<td>12.44</td>
<td>$367.49</td>
<td>$4,572</td>
</tr>
<tr>
<td>Convenience Comm.</td>
<td>1,000 sf</td>
<td>22.08</td>
<td>$367.49</td>
<td>$8,114</td>
</tr>
<tr>
<td>Office</td>
<td>1,000 sf</td>
<td>7.98</td>
<td>$367.49</td>
<td>$2,933</td>
</tr>
<tr>
<td>Public/Institutional</td>
<td>1,000 sf</td>
<td>8.46</td>
<td>$367.49</td>
<td>$3,109</td>
</tr>
<tr>
<td>Industrial</td>
<td>1,000 sf</td>
<td>9.16</td>
<td>$367.49</td>
<td>$3,366</td>
</tr>
<tr>
<td>Warehouse</td>
<td>1,000 sf</td>
<td>4.68</td>
<td>$367.49</td>
<td>$1,720</td>
</tr>
<tr>
<td>Mini Warehouse</td>
<td>1,000 sf</td>
<td>1.82</td>
<td>$367.49</td>
<td>$669</td>
</tr>
</tbody>
</table>

Source: Trips per unit are calibrated trips ends from Table 14; net cost per trip end from Table 10.

For properties located in a PID, the total fee amount is the same, but it is split between the upfront (or net) fee collected at time of building permit and the portion that will be paid by future PID taxes. Future PID taxes are based on average assessed property values per unit and the relevant millage rate, and the future stream of property tax payments is converted to an equivalent present value. The upfront fee is the difference between the total fee and the present value of future PID taxes, as shown in Table 17.

Table 17. Upfront Road Impact Fee Schedule (In PID)

<table>
<thead>
<tr>
<th>Land Use</th>
<th>Unit</th>
<th>Full Fee</th>
<th>Upfront Fee in 5 Mill PID</th>
<th>Upfront Fee in 10 Mill PID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-Family Dwelling</td>
<td>6.04</td>
<td>$3,830</td>
<td>$2,527</td>
<td>$1,221</td>
</tr>
<tr>
<td>Multi-Family Dwelling</td>
<td>7.04</td>
<td>$2,407</td>
<td>$1,934</td>
<td>$1,458</td>
</tr>
<tr>
<td>Hotel/Motel Room</td>
<td>7.04</td>
<td>$2,806</td>
<td>$2,153</td>
<td>$1,498</td>
</tr>
<tr>
<td>General Commercial</td>
<td>1,000 sf</td>
<td>$4,958</td>
<td>$3,851</td>
<td>$2,745</td>
</tr>
<tr>
<td>Convenience Comm.</td>
<td>1,000 sf</td>
<td>$8,800</td>
<td>$5,271</td>
<td>$1,749</td>
</tr>
<tr>
<td>Office</td>
<td>1,000 sf</td>
<td>$3,180</td>
<td>$1,520</td>
<td>$-</td>
</tr>
<tr>
<td>Public/Institutional</td>
<td>1,000 sf</td>
<td>$3,372</td>
<td>$1,645</td>
<td>$-</td>
</tr>
<tr>
<td>Industrial</td>
<td>1,000 sf</td>
<td>$3,651</td>
<td>$2,372</td>
<td>$1,093</td>
</tr>
<tr>
<td>Warehouse</td>
<td>1,000 sf</td>
<td>$1,865</td>
<td>$1,122</td>
<td>$378</td>
</tr>
<tr>
<td>Mini Warehouse</td>
<td>1,000 sf</td>
<td>$725</td>
<td>$243</td>
<td>$-</td>
</tr>
</tbody>
</table>

Source: Gross fee per unit from Table 16; PID tax is net present value of PID taxes over the life of a bond issue from Gregory K. Baum & Company, October 11 and 15, 2012; net fee is difference between total fee and PID tax.
Table 18. Standardized Unit Costs - Segments

<table>
<thead>
<tr>
<th>Component</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Cost</th>
<th>Source and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Minor Collector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>32</td>
<td>$2.92</td>
<td>$93.35</td>
<td>Assumed 6&quot; depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>2</td>
<td>$13.13</td>
<td>$26.26</td>
<td>Gravel, 6' each side equivalent</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>1.204</td>
<td>$2.19</td>
<td>$2.63</td>
<td>5 ft. of cut/fill times 65 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$122.24</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td>6%</td>
<td></td>
<td>$7.33</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>80</td>
<td>$0.55</td>
<td>$43.76</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$173.34</td>
<td></td>
</tr>
<tr>
<td>Rural Minor Arterial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>40</td>
<td>$3.40</td>
<td>$136.14</td>
<td>Assumed 7&quot; depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>2</td>
<td>$13.13</td>
<td>$26.26</td>
<td>Gravel, 6' each side equivalent</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>1.574</td>
<td>$2.19</td>
<td>$3.44</td>
<td>00.5 ft. of cut/fill times 85 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$165.84</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td>6%</td>
<td></td>
<td>$9.95</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>100</td>
<td>$0.55</td>
<td>$54.70</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$230.49</td>
<td></td>
</tr>
<tr>
<td>Urban Non-residential Collector</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>48</td>
<td>$3.40</td>
<td>$163.37</td>
<td>Assumed 7&quot; depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>2</td>
<td>$13.13</td>
<td>$26.26</td>
<td>Machine pour, Type 1, prep. and backfill</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>1.204</td>
<td>$2.19</td>
<td>$2.63</td>
<td>00.5 ft. of cut/fill times 65 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$192.26</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td>6%</td>
<td></td>
<td>$11.54</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>80</td>
<td>$0.55</td>
<td>$43.76</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$247.56</td>
<td></td>
</tr>
<tr>
<td>Urban Minor Arterial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>62</td>
<td>$3.89</td>
<td>$241.17</td>
<td>Assumed 8&quot; depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>2</td>
<td>$13.13</td>
<td>$26.26</td>
<td>Machine pour, Type 1, prep. and backfill</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>1.574</td>
<td>$2.19</td>
<td>$3.44</td>
<td>00.5 ft. of cut/fill times 85 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$270.87</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td>6%</td>
<td></td>
<td>$16.25</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>100</td>
<td>$0.55</td>
<td>$54.70</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$341.82</td>
<td></td>
</tr>
<tr>
<td>Urban Principal Arterial (4 lanes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>72</td>
<td>$4.38</td>
<td>$315.07</td>
<td>Assumed 9&quot; depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>4</td>
<td>$20.24</td>
<td>$80.96</td>
<td>Type 1 curb with 2 4' aprons</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>2.130</td>
<td>$2.19</td>
<td>$4.66</td>
<td>0.5 ft. of cut/fill times 115 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$400.69</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td>6%</td>
<td></td>
<td>$24.04</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>130</td>
<td>$0.55</td>
<td>$71.11</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$495.84</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page.
### Table 18. Standardized Unit Costs - Segments, continued

<table>
<thead>
<tr>
<th>Component</th>
<th>Unit Type</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Cost</th>
<th>Source and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban Principal Arterial (6 lanes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EPC Engineering Criteria Manual Figure 2-11</td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>96</td>
<td>$4.86</td>
<td>$466.77</td>
<td>Assumed 10” depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>4</td>
<td>$20.24</td>
<td>$80.96</td>
<td>Type 1 curb with 2 4’ aprons</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>2.685</td>
<td>$2.19</td>
<td>$5.88</td>
<td>0.5 ft. of cut/fill times 145 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$553.60</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td></td>
<td></td>
<td>$33.22</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>160</td>
<td>$0.55</td>
<td>$87.52</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$674.34</td>
<td></td>
</tr>
<tr>
<td>Urban Expressway (4 lanes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EPC Engineering Criteria Manual Figure 2-10</td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>72</td>
<td>$4.86</td>
<td>$350.08</td>
<td>Assumed 10” depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>4</td>
<td>$20.24</td>
<td>$80.96</td>
<td>Type 1 curb with 2 4’ aprons</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>2.315</td>
<td>$2.19</td>
<td>$5.06</td>
<td>0.5 ft. of cut/fill times 125 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
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</tr>
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<td>Const. Mgmt.</td>
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<td></td>
<td>$26.17</td>
<td>Includes engineering, surveying, soils work</td>
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<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>140</td>
<td>$0.55</td>
<td>$76.58</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$538.85</td>
<td></td>
</tr>
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<td>Urban Expressway (6 lanes)</td>
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<td></td>
<td></td>
<td></td>
<td>EPC Engineering Criteria Manual Figure 2-9</td>
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<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>96</td>
<td>$4.86</td>
<td>$466.77</td>
<td>Assumed 10” depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>4</td>
<td>$20.24</td>
<td>$80.96</td>
<td>Type 1 curb with 2 4’ aprons</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>2.7</td>
<td>$2.19</td>
<td>$5.88</td>
<td>0.5 ft. of cut/fill times 145 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$553.60</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td></td>
<td></td>
<td>$33.22</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>160</td>
<td>$0.55</td>
<td>$87.52</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$674.34</td>
<td></td>
</tr>
<tr>
<td>Rural Principal Arterial (4 lane)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EPC Engineering Criteria Manual Figure 2-4</td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>76</td>
<td>$4.13</td>
<td>$314.10</td>
<td>Assumed 8.5” depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>4</td>
<td>$10.94</td>
<td>$43.76</td>
<td>4’ X 10” shoulder tapered to nothing at 4’</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>2.685</td>
<td>$2.19</td>
<td>$5.88</td>
<td>0.5 ft. of cut/fill times 145 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$363.73</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td></td>
<td></td>
<td>$21.82</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>180</td>
<td>$0.55</td>
<td>$98.46</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
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<td></td>
<td></td>
<td>$484.02</td>
<td></td>
</tr>
<tr>
<td>Rural Principal Arterial (6 lane)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EPC Engineering Criteria Manual Figure 2-3</td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>112</td>
<td>$4.86</td>
<td>$544.57</td>
<td>Assumed 10” depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>4</td>
<td>$10.94</td>
<td>$43.76</td>
<td>4’ X 10” shoulder tapered to nothing at 4’</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>3.519</td>
<td>$2.19</td>
<td>$7.70</td>
<td>0.5 ft. of cut/fill times 190 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$596.03</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td></td>
<td></td>
<td></td>
<td>$35.76</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>210</td>
<td>$0.55</td>
<td>$114.87</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$746.66</td>
<td></td>
</tr>
</tbody>
</table>

Continued on next page.
### Table 18. Standardized Unit Costs - Segments, continued

<table>
<thead>
<tr>
<th>Component</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Cost</th>
<th>Source and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rural Expressway (4 lane)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>EPC Engineering Criteria Manual Figure 2-2</td>
</tr>
<tr>
<td>Asphalt</td>
<td>ft.</td>
<td>76</td>
<td>$4.38</td>
<td>$332.58</td>
<td>Assumed 9” depth</td>
</tr>
<tr>
<td>Shoulder</td>
<td>ea.</td>
<td>4</td>
<td>$10.94</td>
<td>$43.76</td>
<td>4’ X 10” shoulder tapered to nothing at 4’</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cy.</td>
<td>3.1</td>
<td>$2.19</td>
<td>$6.69</td>
<td>0.5 ft. of cut/fill times 165 ft.</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td></td>
<td></td>
<td>$383.02</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td>6%</td>
<td></td>
<td></td>
<td>$22.98</td>
<td>Include engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>ft.</td>
<td>180</td>
<td>$0.55</td>
<td>$98.46</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td>Total Cost per Linear Foot</td>
<td></td>
<td></td>
<td></td>
<td>$504.46</td>
<td></td>
</tr>
</tbody>
</table>

| Rural Expressway (6 lane) |      |          |           |      | EPC Engineering Criteria Manual Figure 2-1           |
| Asphalt                 | ft.  | 112      | $4.38     | $490.11| Assumed 9” depth                                     |
| Shoulder                | ea.  | 4        | $10.94    | $43.76 | 4’ X 10” shoulder tapered to nothing at 4’           |
| Earthwork               | cy.  | 3.519    | $2.19     | $7.70 | 0.5 ft. of cut/fill times 190 ft.                    |
| Subtotal                |      |          |           | $541.57|                                                       |
| Const. Mgmt.            | 6%   |          |           | $32.49 | Include engineering, surveying, soils work           |
| R.O.W.                  | ft.  | 210      | $0.55     | $114.87| Based on EPC school/park fee                         |
| Total Cost per Linear Foot |    |      |           | $688.94|                                                       |

| State Road, Type A (4 lane divided) |      |          |           |      | CDOT Standard Plans Figure 4-1                       |
| Asphalt                 | ft.  | 76       | $4.13     | $314.10| Assumed 8.5” depth                                   |
| Shoulder                | ea.  | 0        | $0.00     | $0.00 | Not used by CDOT                                    |
| Earthwork               | cy.  | 2.7      | $2.19     | $5.91 | 0.5 ft. of cut/fill times 145 ft.                    |
| Subtotal                |      |          |           | $320.01|                                                       |
| Const. Mgmt.            | 6%   |          |           | $19.20 | Include engineering, surveying, soils work           |
| R.O.W.                  | ft.  | 180      | $0.55     | $98.46 | Based on EPC school/park fee                         |
| Total Cost per Linear Foot |    |      |           | $437.67|                                                       |

| State Road, Type AA (6 lane divided) |      |          |           |      | CDOT Standard Plans Figure 4-1                       |
| Asphalt                 | ft.  | 112      | $4.86     | $544.57| Assumed 10” depth                                   |
| Shoulder                | ea.  | 0        | $0.00     | $0.00 | Not used by CDOT                                    |
| Earthwork               | cy.  | 3.500    | $2.19     | $7.66 | 0.5 ft. of cut/fill times 190 ft.                    |
| Subtotal                |      |          |           | $552.23|                                                       |
| Const. Mgmt.            | 6%   |          |           | $33.13 | Include engineering, surveying, soils work           |
| R.O.W.                  | ft.  | 210      | $0.55     | $114.87| Based on EPC school/park fee                         |
| Total Cost per Linear Foot |    |      |           | $700.23|                                                       |

Source: Components, units, quantities and notes from Table 16 in Duncan Associates/LSA Associates, Major Transportation Corridors Plan: Road Impact Fee Study, November 2012, unit costs increased by a cost inflation factor of 9.4%, as recommended by the Oversizing and Reimbursement Committee, June 7, 2016.
The standardized unit cost for intersections used in the fee calculations are shown in Table 19. These costs are per intersection leg. A standard four-way intersection will have four intersection legs.

### Table 19. Standardized Unit Costs - Intersection Legs

<table>
<thead>
<tr>
<th>Component</th>
<th>Unit</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Cost</th>
<th>Source and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urban Minor Arterial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asphalt</td>
<td>cu. yards</td>
<td>752</td>
<td>$157.54</td>
<td>$118,483</td>
<td>Assumed 8&quot; depth</td>
</tr>
<tr>
<td>Curb</td>
<td>linear feet</td>
<td>880</td>
<td>$13.13</td>
<td>$11,553</td>
<td>Machine pour, Type 1, prep. and backfill</td>
</tr>
<tr>
<td>Earthwork</td>
<td>cu. yards</td>
<td>771</td>
<td>$2.19</td>
<td>$1,687</td>
<td>Used 0.5 ft. of cut/fill times 85 ft.</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>$131,722</td>
<td></td>
</tr>
<tr>
<td>Const. Mgmt.</td>
<td>6%</td>
<td></td>
<td></td>
<td>$7,903</td>
<td>Includes engineering, surveying, soils work</td>
</tr>
<tr>
<td>R.O.W.</td>
<td>sq. feet</td>
<td>47,180</td>
<td>$0.55</td>
<td>$25,807</td>
<td>Based on EPC school/park fee</td>
</tr>
<tr>
<td><strong>Total Cost of Intersection Leg</strong></td>
<td></td>
<td></td>
<td></td>
<td>$165,433</td>
<td></td>
</tr>
<tr>
<td>– Base Cost</td>
<td>feet</td>
<td>440</td>
<td>$341.82</td>
<td>-$150,401</td>
<td>From Appendix A: Standardized Unit Costs</td>
</tr>
<tr>
<td><strong>Additional Cost of Intersection Leg</strong></td>
<td></td>
<td></td>
<td></td>
<td>$15,032</td>
<td></td>
</tr>
</tbody>
</table>

| **Urban Principal Arterial (4 Lanes), 1 Left Turn Lane** |          |          |           |        |                                                      |
| Asphalt          | cu. yards| 1,451    | $157.54   | $228,537| Assumed 8" depth                                      |
| Curb             | linear feet | 2,060  | $20.24    | $41,692| Machine pour, Type 1, prep. and backfill              |
| Earthwork        | cu. yards | 1,288    | $2.19     | $2,818 | Used 0.5 ft. of cut/fill times 85 ft.                 |
| **Subtotal**     |          |          |           | $273,047|                                                      |
| Const. Mgmt.     | 6%       |          |           | $16,383| Includes engineering, surveying, soils work          |
| R.O.W.           | sq. feet | 77,300   | $0.55     | $42,283| Based on EPC school/park fee                          |
| **Total Cost of Intersection Leg** |          |          |           | $331,713|                                                      |
| – Base Cost      | feet     | 515      | $495.84   | -$255,358| From Appendix A: Standardized Unit Costs             |
| **Additional Cost of Intersection Leg** |          |          |           | $76,355 |                                                      |

| **Urban Principal Arterial (4 Lanes), 2 Left Turn Lanes** |          |          |           |        |                                                      |
| Asphalt          | cu. yards| 2,152    | $157.54   | $338,987| Assumed 8" depth                                      |
| Curb             | linear feet | 3,020  | $20.24    | $61,122| Machine pour, Type 1, prep. and backfill              |
| Earthwork        | cu. yards | 1,984    | $2.19     | $4,341 | Used 0.5 ft. of cut/fill times 85 ft.                 |
| **Subtotal**     |          |          |           | $404,450|                                                      |
| Const. Mgmt.     | 6%       |          |           | $24,267| Includes engineering, surveying, soils work          |
| R.O.W.           | sq. feet | 118,150  | $0.55     | $64,628| Based on EPC school/park fee                          |
| **Total Cost of Intersection Leg** |          |          |           | $493,345|                                                      |
| – Base Cost      | feet     | 755      | $495.84   | -$374,359| From Appendix A: Standardized Unit Costs             |
| **Additional Cost of Intersection Leg** |          |          |           | $118,986|                                                      |

| **Urban Principal Arterial (6 Lanes)** |          |          |           |        |                                                      |
| Asphalt          | cu. yards| 2,389    | $157.54   | $376,346| Assumed 8" depth                                      |
| Curb             | linear feet | 2,300  | $20.24    | $46,550| Machine pour, Type 1, prep. and backfill              |
| Earthwork        | cu. yards | 1,751    | $2.19     | $3,831 | Used 0.5 ft. of cut/fill times 85 ft.                 |
| **Subtotal**     |          |          |           | $426,727|                                                      |
| Const. Mgmt.     | 6%       |          |           | $25,604| Includes engineering, surveying, soils work          |
| R.O.W.           | sq. feet | 103,190  | $0.55     | $56,445| Based on EPC school/park fee                          |
| **Total Cost of Intersection Leg** |          |          |           | $508,776|                                                      |
| – Base Cost      | feet     | 575      | $674.34   | -$387,746| From Appendix A: Standardized Unit Costs             |
| **Additional Cost of Intersection Leg** |          |          |           | $121,030|                                                      |

Source: Components, units, quantities and notes from Table 17 in Duncan Associates/LSA Associates, Major Transportation Corridors Plan: Road Impact Fee Study, November 2012; unit costs from 2012 study, inflated by 9.4% per the recommendation of the Oversizing and Reimbursement Committee, June 7, 2016.
### Table 20. Planned Improvement Descriptions and Traffic Volumes

<table>
<thead>
<tr>
<th>Corridor</th>
<th>From</th>
<th>To</th>
<th>Type</th>
<th>2016 Cap.</th>
<th>2016 Trips</th>
<th>2040 Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enoch Rd</td>
<td>SH 94</td>
<td>Schriever</td>
<td>Rural</td>
<td>8,000</td>
<td>4,500</td>
<td>27,800</td>
</tr>
<tr>
<td>Marksheffel Rd</td>
<td>Stetson Hills</td>
<td>2000 ft north</td>
<td>Urban</td>
<td>18,000</td>
<td>11,000</td>
<td>21,000</td>
</tr>
<tr>
<td>Marksheffel Rd</td>
<td>Barnes Rd</td>
<td>Carefree Cir N</td>
<td>Urban</td>
<td>18,000</td>
<td>17,600</td>
<td>34,000</td>
</tr>
<tr>
<td>Marksheffel Rd</td>
<td>0.5 mi. N/of Fontaine</td>
<td>Link Rd</td>
<td>Rural</td>
<td>14,000</td>
<td>14,600</td>
<td>19,300</td>
</tr>
<tr>
<td>Fontaine</td>
<td>Marksheffel Rd</td>
<td>Easy St</td>
<td>Urban</td>
<td>14,000</td>
<td>3,000</td>
<td>5,000</td>
</tr>
<tr>
<td>Bradley Rd</td>
<td>Academy Blvd</td>
<td>Hancock Exp</td>
<td>Urban</td>
<td>18,000</td>
<td>12,000</td>
<td>18,000</td>
</tr>
<tr>
<td>Academy Blvd</td>
<td>I-25</td>
<td>Bradley Rd</td>
<td>Urban</td>
<td>48,000</td>
<td>61,100</td>
<td>96,100</td>
</tr>
<tr>
<td>Woodmen Rd</td>
<td>Marksheffel</td>
<td>Banning Lewis</td>
<td>Urban</td>
<td>36,000</td>
<td>22,000</td>
<td>39,000</td>
</tr>
<tr>
<td>Walker Rd</td>
<td>SH 83</td>
<td>Stepler Rd</td>
<td>Rural</td>
<td>8,000</td>
<td>2,300</td>
<td>17,900</td>
</tr>
<tr>
<td>Meridan Rd</td>
<td>Murphy Rd</td>
<td>Rex Rd</td>
<td>Rural</td>
<td>8,000</td>
<td>4,800</td>
<td>16,100</td>
</tr>
<tr>
<td>Black Forest Rd</td>
<td>Stapleton Dr</td>
<td>Research</td>
<td>Urban</td>
<td>14,000</td>
<td>6,500</td>
<td>18,200</td>
</tr>
<tr>
<td>Stapleton Dr</td>
<td>Towner</td>
<td>US 24</td>
<td>Urban</td>
<td>18,000</td>
<td>2,000</td>
<td>17,000</td>
</tr>
<tr>
<td>Vollmer Rd</td>
<td>Marksheffel</td>
<td>Stapleton Dr</td>
<td>Rural</td>
<td>8,000</td>
<td>2,500</td>
<td>8,700</td>
</tr>
<tr>
<td>Judge Orr Rd</td>
<td>Eastonville Rd</td>
<td>Peyton Hwy</td>
<td>Rural</td>
<td>12,000</td>
<td>2,700</td>
<td>13,600</td>
</tr>
<tr>
<td>Hwy 105</td>
<td>Knollwood Blvd</td>
<td>SH83</td>
<td>Rural</td>
<td>18,000</td>
<td>5,900</td>
<td>16,500</td>
</tr>
<tr>
<td>Grinnell Blvd</td>
<td>Powers Blvd</td>
<td>Bradley Rd</td>
<td>Rural</td>
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<td>10,700</td>
<td>18,000</td>
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**Subtotal, County Arterials** 37,386

| Roller Coaster Rd         | Eliminate jog in alignment | 0.823 0 2 Rural 0 MA 0 0 6,700 |
| Black Forest Rd           | Eliminate jog in alignment | 0.835 0 2 Rural 0 MA 0 0 13,800 |
| Hodgen Rd                 | Eastonville Rd           | Elbert Rd        | 1.246 0 2 Rural 0 C 0 0 5,200 |
| Rex Rd                    | Terminus                  | Eastonville Rd   | 1.200 0 2 Urban 0 C 0 0 600  |
| Stapleton Dr              | Towner Rd                 | Black Forest Rd  | 4.040 0 4 Urban 0 PA 0 0 22,500 |
| Woodmen Hills Rd          | Stapleton                 | Raygor Rd        | 2.522 0 2 Urban 0 C 0 0 200  |
| Peyton Hwy                | Judge Orr                 | Falcon Hwy       | 2.368 0 2 Rural 0 C 0 0 4,100 |
| Howell Lane               | Bridge at Kettle Crk      | 0.714 0 2 Rural 0 C 0 0 1,200 |
| Meridan Rd                | Bradley Rd                | Mesa Ridge Pky   | 3.250 0 2 Rural 0 MA 0 0 3,000 |
| Mesa Ridge Pkwy           | Marksheffel               | Meridian Rd ext  | 1.537 0 2 Rural 0 MA 0 0 7,100 |
| Fontaine Blvd             | Terminus                  | Meridian Rd ext  | 1.209 0 2 Urban 0 MA 0 0 2,700 |
| Marksheffel Rd            | Woodmen Rd                | Research Pkwy    | 1.016 0 4 Rural 0 PA 0 0 7,500 |
| Banning Lewis             | Woodmen Rd                | Stapleton        | 0.793 0 4 Urban 0 PA 0 0 15,000 |
| Mesa Ridge Pkwy           | Powers Blvd               | Marksheffel Rd   | 1.298 0 2 Urban 0 PA 0 0 12,000 |
| Tutt Blvd Ext             | Dublin Blvd               | Templeton Gap    | 0.332 0 4 Urban 0 PA 0 0 8,000  |
| Furrow Rd Ext             | Lamplighter Dr            | Higby Rd         | 0.301 0 2 Urban 0 C 0 0 5,200  |
| Bradley Rd                | Grinnell Blvd             | Powers Blvd      | 1.391 0 2 Urban 0 MA 0 0 9,100  |

**Subtotal, New County Connections** 24,575

| Curtis Rd                 | US 24           | SH 94            | Rural    | 6,000     | 3,900      | 15,500     |
| Curtis Rd                 | SH 94           | Drennan Rd       | Rural    | 6,000     | 2,700      | 11,500     |
| Bradley Rd                | COS City Limit  | Curtis Rd        | Rural    | 6,000     | 2,100      | 11,200     |
| Old Pueblo Rd             | Fountain City Lmts| I-25            | Rural    | 6,000     | 420        | 6,600      |
| Falcon Hwy                | US 24           | 1 mi E/of Curtis | Rural    | 6,000     | 4,800      | 12,100     |
| Hodgen Rd                 | Goshawk Rd      | Eastonville Rd   | Rural    | 6,000     | 2,500      | 10,400     |
| Baptist Rd                | Desiree Dr      | Roller Coaster Rd| Rural    | 6,000     | 1,100      | 7,200      |
| Hodgen Rd                 | Black Forest Rd | Bar X Rd         | Rural    | 6,000     | 4,000      | 12,000     |
| Hodgen Rd                 | Roller Coaster  | SH 83            | Rural    | 6,000     | 5,500      | 7,200      |
| Meridian Rd               | Hodgen Rd       | Murphy Rd        | Rural    | 6,000     | 2,400      | 7,000      |
| Black Forest Rd           | Hodgen Rd       | Stapleton Dr     | Rural    | 6,000     | 4,800      | 13,400     |

Continued on next page.
Table 20. Planned Improvement Descriptions and Traffic Volumes, continued

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<th>To</th>
<th>Mi.</th>
<th>Ex</th>
<th>Fut</th>
<th>Type</th>
<th>Class</th>
<th>LOS D</th>
<th>Cap.</th>
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<th>2040 Trips</th>
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Subtotal, Rural Road Upgrades 71.613

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<th>Class</th>
<th>LOS D</th>
<th>Cap.</th>
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<th>2040 Trips</th>
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Subtotal, Rural Road Paving 49.816

Total, County Road Improvements 183.390

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<th>To</th>
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<th>Ex</th>
<th>Fut</th>
<th>Type</th>
<th>Class</th>
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<th>Cap.</th>
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Total, State Roads 15.082

Grand Total, All Improvements 198.472

Notes: Classifications are Freeway (FW), Expressway (EX), Principal Arterial (PA), Minor Arterial (MA), Collector (C), Unimproved (U), and Gravel (G)

### Table 21. Planned Improvement Project Data

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<th>Cost/ Lin. Foot</th>
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<th>% Thru</th>
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*Continued on next page.*
Table 21. Planned Improvement Project Data, continued

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<td>Old Ranch Rd</td>
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<td>OldNorthgate Rd</td>
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* no unit cost available

Source: Costs per linear foot from Table 18; costs per intersection leg from Table 19; number of needed legs and signals and percent pass-through traffic from Felsburg Holt & Ullevig, data from Major Transportation Corridors Plan analysis, November 14, 2016; percent deficiency based volume and capacity data from Table 20; planned State road signals are at SH 94/Curtis, SH 94/Enoch, US 83/Shoup, US 24/Falcon Highway, and US 83/Hodgen.
### Table 22. Planned Improvement Costs

<table>
<thead>
<tr>
<th>Corridor</th>
<th>From</th>
<th>To</th>
<th>Segment Cost</th>
<th>Intersecs/ Signals</th>
<th>Less Deficiencies</th>
<th>Less Thru Trips</th>
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<td>$0</td>
<td>-$2,147,866</td>
<td>$5,807,193</td>
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<td>Powers Blvd</td>
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<td>SH 94</td>
<td>$7,978,648</td>
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<td>$0</td>
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<td>COS City Limit</td>
<td>Curtis Rd</td>
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<td>US 24</td>
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<td>$4,502,840</td>
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<td>Goshawk Rd</td>
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<td>$0</td>
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<td>Desiree Dr</td>
<td>Roller Coaster Rd</td>
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<td>$0</td>
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<td>$1,735,782</td>
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<td>Bar X Rd</td>
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<td>$45,096</td>
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<td>-$57,530</td>
<td>$1,093,705</td>
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<td>Roller Coaster</td>
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<td>Murphy Rd</td>
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<td>Stapleton Dr</td>
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<td>$5,597,280</td>
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*Continued on next page.*
## Table 22. Planned Improvement Costs, continued

<table>
<thead>
<tr>
<th>Corridor</th>
<th>From</th>
<th>To</th>
<th>Segment Cost</th>
<th>Intersecs/ Signals</th>
<th>Less Deficiencies</th>
<th>Less Thru Trips</th>
<th>Total Net Cost</th>
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<td>Vollmer Rd</td>
<td>Stapleton Dr</td>
<td>Shoup Rd</td>
<td>$3,217,106</td>
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<td>$4,191,513</td>
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<td>$0</td>
<td>$4,251,641</td>
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<td>Shoup Rd</td>
<td>Old Ranch Rd</td>
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<td>$1,964,489</td>
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<td>Steppler Rd</td>
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<td>Old Northgate Rd</td>
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<td>Cloverleaf Rd</td>
<td>Rollarcoaster Rd</td>
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<td>Eastonville Rd</td>
<td>McLaughlin Rd</td>
<td>Latigo Blvd</td>
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<td>Woodmoor Dr</td>
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<td>Woodmen Dr</td>
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<td>Meridian Rd</td>
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<td>Blasengame Rd</td>
<td>Ramah Hwy</td>
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<td>Ramah Hwy</td>
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<td>Eastonville Loop</td>
<td>Londonderry Dr</td>
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<td>$326,564</td>
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<td>Blaneys Rd S</td>
<td>Meridan Rd</td>
<td>Hoofbeat Rd</td>
<td>$463,097</td>
<td>$0</td>
<td>-$3,705</td>
<td>$0</td>
<td>$459,392</td>
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<td>Drennan Rd</td>
<td>Curtis Rd</td>
<td>Ellicott Hwy</td>
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<td>$2,942,684</td>
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<td>Sanborn Rd</td>
<td>Ellicott Hwy</td>
<td>Baggett Rd</td>
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<td>Log Rd</td>
<td>90 degree bend</td>
<td>SH 94</td>
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<td>Latigo Blvd</td>
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<td>Blaney Rd S</td>
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<td>Soap Weed Rd</td>
<td>South of US 24</td>
<td>Beg. of paving</td>
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<td><strong>Subtotal, Rural Road Paving</strong></td>
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<td><strong>Subtotal, County Road Improvements</strong></td>
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<td>City Limits</td>
<td>Slocum Rd</td>
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<td>Shoup Rd</td>
<td>Northgate Rd</td>
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<td>Manitou Interchg</td>
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<td>Marksheffel</td>
<td>Constitution</td>
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<td>Woodmen Rd</td>
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<td>Northgate</td>
<td>Hodgen Rd</td>
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<td><strong>Subtotal, State Roads</strong></td>
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<td>-$2,591,611</td>
<td>-$22,472,191</td>
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</table>

*Segment cost based on estimated cost from 2016 Major Transportation Corridors Plan.*

Source: Segment cost based on segment length from Table 20 and cost per foot from Table 18; intersection and signal cost is number of needed intersection less times cost per leg from Table 19 plus number of signals from Table 21 times cost per signal from Table 4; pass-through and deficiency costs are based on total project cost (sum of segment and intersection/signal costs) and deficiency and pass-through percentages from Table 22.
Table 23. Planned Signals

<table>
<thead>
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<th>Planned Signal Location</th>
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<tbody>
<tr>
<td>SH 94 at Curtis Road</td>
</tr>
<tr>
<td>SH 94 at Enoch Road</td>
</tr>
<tr>
<td>US 83 at Shoup Road</td>
</tr>
<tr>
<td>US 83 at Hodgen Road</td>
</tr>
<tr>
<td>US 24 at Falcon Highway</td>
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Table 24. Outstanding Pre-Ordinance Credits

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<tr>
<th>Credit Holder/Area</th>
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<tr>
<td>Lorson Ranch</td>
<td>$2,626,512</td>
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<tr>
<td>Meridian Service</td>
<td>$175,317</td>
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<td>Sand Creek Investments</td>
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<td>Eastbrook</td>
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<tr>
<td>4 Way Ranch</td>
<td>$102,508</td>
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<tr>
<td>Journey Homes CS, LLC</td>
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<td>Campbell Homes</td>
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<tr>
<td>Total</td>
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</table>

Source: Reimbursement credits outstanding as of September 27, 2016 from El Paso County Public Services Department, October 11, 2016