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County of El Dorado

Legislation Text

File #: 07-1111, **Version:** 2

Hearing to consider adoption of Resolution **164-2007** to amend Standard Plan 101-C of the El Dorado County Design Improvement Standards Manual. (Cont'd 7-3-07, Item 17)

BUDGET SUMMARY:		
Total Estimated Cost		$0.00
Funding		
Budgeted	$	
New Funding	$	
Savings	$	
Other	$	
Total Funding Available	$	
Change To Net County Cost		$0.00

Fiscal Impact/Change to Net County Cost:
There is no Fiscal Impact associated with this agenda item. There is no cost to the County General Fund.

Background:
The Design Improvements Standards Manual (DISM) was adopted by the Board on May 27, 1986 per Resolution 136-86. The DISM has been revised seven (7) times since its adoption. The most recent revision was approved on March 13, 2007 by the Board as part of the revisions to the County's Grading Ordinance. Standard Plan 101-C (101-C) of the DISM was last amended in 1990.

It had been the past practice of staff performing discretionary reviews of Parcel Map applications to concur with many of the requests for waivers to 101-C standards. As a result of these past practices, Parcel Map roadways (both Publicly and Privately maintained) were approved and constructed with various widths, design speeds, grades, surfacing, etc., throughout the County.

With the recent adoption of the General Plan, there has been a renewed flow of Parcel Map applications submitted to the Development Services Department that are routed to the Department of Transportation (Department) for review, comment, and conditions. Rather than continuing to regularly process design waivers to the 101-C County Standard, Department staff (staff) is proposing that the standard be changed based on nationally recognized engineering standards.

On January 30th, 2007, at a hearing regarding an appeal of conditions related to a Parcel Map project, the Board directed staff to return to the Board with either a finding that the design parameters of 101-C were proper and that we should enforce them as they are or to come back with a revised detail that meets appropriate engineering standards for the Board to consider for approval.

As a result of the direction by the Board, staff has reviewed the pertinent engineering literature related to the design of Low Volume Roads ("Guidelines for Geometric Design of Very Low-Volume Roads (Average Daily Traffic [ADT] </= 400"), American Association of State Highway and Transportation Officials (AASHTO), 2001, with August, 2002 changes), "A Policy on Geometric Design of Highways and Streets," AASHTO, 2004, as well as the Caltrans Highway Design Manual for information related to the design of the structural section (asphalt and/or aggregate base sections) of the roadway. Staff has also sought input from the Development Community through discussions with the SAGE membership and well as through focused meeting with Engineers representing Civil Design and Geotechnical Firms. As a result of the aforementioned research and the meetings with the Design Community, the Department recommends the following revised 101-C for inclusion in the County's Design Improvements Standards Manual.

Reason for Recommendation:
There are many criteria to consider when developing a road standard. In addition to the engineering properties of the roadway, which includes design speed, lane width, types of shoulders and their width, grades, structural section, surface treatment, and drainage, the standard should also consider the weather conditions that could be reasonably expected, water quality impacts, air quality issues, maintenance of the completed roadway, and conformance with existing community standards and with the County's General Plan.

The current County Standard for Parcel Map roadways 101-C requires the roadways to be 24 feet wide with a 2-foot wide shoulder on each side and with a gravel surface for up to 3,000 vehicles per day. (This is equivalent to the traffic volumes measured on El Dorado Road, just north of Highway 50.) The same standards in 101-C also allow a chip seal surface for up to 5,000 vehicles per day. (This is equivalent to the traffic volumes on Mother Lode Drive, just west of Missouri Flat Road.)

There are concerns with these standards from several perspectives. Maintaining the current width requirements for the lower volume roads creates unnecessary environmental impacts due to the increased soil disturbance, grading and tree removal that is required to construct roadways that will ultimately have fairly low ADTs. There is also a higher cost associated with wider roads that may not be justifiable if the wider road is not needed. The roadway surface standards also cause some concern. Staff strongly believes that for permanent construction, paved roads are always a better alternative to gravel roads. The 2004 General Plan provides a statement in the last sentence in Table TC-1 "All travel ways on roads should be paved." which supports staffs preference for paved roads.

Roadway Geometrics
Review of the referenced literature found that narrower, unpaved roadways could perform adequately for traffic volumes of less than 400 vehicles per day. With the referenced material as a basis, staff is comfortable making the following recommendations for Parcel Map Roads with less than 400 vehicles per day ADT for private, Non-County maintained roads:

RW	ADT	Road Width	Shoulder Width	Road Surface	Design Speed	Maximum Grade
50'	Less than 150'	18'	1'	Gravel	20MPH	12% unpaved/15% paved
50'	151-400	20'	2'	Gravel	25MPH	

The design parameters in the preceding table meet Fire Safe Standards. For roads above 400 ADT, staff recommends that the road be improved to higher standards than those currently allowed. For

roads that meet the low ADT's above but are located above 3,000 ft elevation, or with grades in excess of 12%, staff recommends that the roads be paved.

The roadway widths in the table above match the first two rows of the proposed new sections presented to and approved by SAGE at its May meeting. The maximum grades have been reduced from those in the SAGE version of the revisions to match those allowed in the referenced material.

Roadway Structural Section

The Caltrans Highway Design Manual (HDM) gives methods for calculating the 20-year design life of road structural sections which include either Asphalt Cement (AC) or Portland Concrete Cement (PCC) over an Aggregate Base (AB) section. The HDM doesn't provide design criteria for roadway sections consisting of AB only. While meeting with a representative from a local geotechnical firm, staff was informed that the firm believed that a six-inch section of AB will perform satisfactorily and that the sections that are presented in the proposed revised 101-C (attached) are excessive. Staff takes no exception to reducing the sections shown in the proposed revised 101-C if a design professional more experienced in the design of low volume roadways wishes to submit a design for Department's review and concurrence.

Another related item that staff is recommending in Note #6 of the proposed revised 101-C is the situation of an existing roadway that was paved to a substandard (narrower) width at some point in the past. Staff would recommend that the project that is under discretionary review be conditioned to match the roadway surfacing to the appropriate width instead of widening the roadway by constructing a wider gravel shoulder. Without proper maintenance, the widened gravel shoulder would soon revert to a natural state and wouldn't serve the purpose of providing for two-way traffic. By doing this, we also recognize the investment that some previous owner had made in the road that is now being burdened by the increased use from the new development.

Other Related Items

The DISM on Page 22, Section 9, describes the requirement that all minor land divisions provide for a second connection to a County-Maintained road. Deviations to this standard can be approved with the concurrence of the responsible Fire Agency and the Planning Director. It has been the Department's position that this requirement is a Fire Safety condition and not a Department circulation and traffic operations related condition. Department would request that it be allowed to defer to the responsible Fire Agency for recommendations regarding the need for secondary access or if other mitigations are acceptable. If the Department is the responsible County department for enforcing this standard, the Department will recommend that all secondary access roads meet Fire Safe Standards. These are the Fire Safe Standards we will enforce:

FIRE SAFE STANDARDS

Minimum Road Width = 18 ft

Maximum length of dead-end roads (if exceeded a secondary access must be provided that complies with Fire Safe Standards)

Parcels zoned for less than 1 acre = 800 ft

Parcels zoned for 1 to 4.99 acres = 1,320 ft

Parcels zoned for 5 to 19.99 acres = 2,640 ft

Parcels zoned for 20 acres or larger = 5,280 ft

A final matter related to this topic that staff requests direction from the Board is the conflict between the Fire Safe Standards and the DISM and within the DISM itself regarding offsite improvements. The DISM (page 20) restricts the offsite roadway improvements to be of the same type and value of the improvements required onsite. The next paragraph in the DISM states that the offsite roads to serve the new parcels must be at least Fire Safe. These two paragraphs can be in conflict if the existing road serving the original parcel is substandard in width. To address this conflict and to recognize the different impacts associated with larger land subdivisions, staff recommends that the following levels of improvements be used to condition new projects for:

Residential Parcel Maps

Onsite roads must comply with County standards

Offsite access must comply with Fire Safe Standards

Tentative Maps

Onsite roads must comply with the County Standards

Offsite access must comply with County Road Standards

Action to be taken following Board approval:

1. Staff will distribute the revised 101-C to County staff and design professionals in the community.
2. Staff will prepare a CEQA Negative Declaration for this revision and will return it to your Board to for consideration after the completion of the comment period.
3. Staff is starting efforts towards an update to the DISM. Upon completion of that work effort, the draft document will be presented to the development community for their review prior to returning the DISM to the Board for consideration and approval.

Contact:
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Concurrences: