



TOWN BOARD WORK SESSION

June 24, 2013 – 6:00 P.M.

301 Walnut Street, Town Board Chambers, Windsor, CO 80550

The Town of Windsor will make reasonable accommodations for access to Town services, programs, and activities and will make special communication arrangements for persons with disabilities. Please call (970) 674-2400 by noon on the Thursday prior to the meeting to make arrangements.

GOAL of this Work Session is to have the Town Board receive information on topics of Town business from the Town Manager, Town Attorney and Town staff in order to exchange ideas and opinions regarding these topics.

Members of the public in attendance who have a question related to an agenda item are requested to allow the Town Board to discuss the topic and then be recognized by the Mayor prior to asking their question.

AGENDA

1. Cul-de-sacs in future subdivisions
3. Future Meetings Agenda



MEMORANDUM

Date: June 24, 2013
To: Mayor and Town Board
Via: Kelly Arnold, Town Manager
From: Dennis Wagner
Re: Cul-de-sac design standards

Purpose of Work Session:

Discuss Section 1.10 (Non-Connective Roadways) in the town's Street Specifications Manual that was adopted in 2009. Local developer, Martin Lind, recently pointed out that Section 1.10 presents a somewhat negative connotation to cul-de-sacs and must be "specifically permitted upon approval by the Town Engineer".

History of 2009 Review/Adoption Process:

The original Town of Windsor Street Specifications Manual was developed in 1979. Many changes in engineering design criteria, technology, methods of construction, and materials have been developed that enable better roadway construction and more modern roadway alignments and design features. Staff's intention in development of new street specifications, adopted in 2009, was to incorporate these factors into a new and more precise set of specifications to guide the Town's infrastructure.

After the Town's Engineering staff spent many hours reviewing and revising the first draft and the final product was agreed upon, copies of the proposed specifications were forwarded on February 5, 2009, to various Consultants, Developers, Surveyors and Engineers; more than forty attempts were made to distribute this document and request comments and suggestions. Two responses were received, which gave similar comments.

Some comments we received on the proposed street specifications questioned if they are in line with neighboring municipalities; i.e. Larimer County Urban Area Street Standards (LCUASS), etc. Although the LCUASS was the primary guide in developing our standards, several specific items may be more in line with the City of Greeley Standards. In almost all instances, in order to promote similarity of design and layout and consistency in construction, we tried to stay within the same general framework as the other local entities in close proximity to our community.

Specifically, standards for roadway designs varied from LCUASS in areas such as radius and tangent lengths for curves, which reviewers have indicated may change the “look” or layout of future subdivisions in the Town. Those particular specifics came from Greeley Specifications. Other criteria, such as minimum arc lengths, curb return radii, cross pan design, vertical curve requirements, and acceleration/deceleration lanes are in general conformance with adjacent community standards and/or existing Town requirements.

In no case do the new regulations create a situation whereby the density of development or percentage of lot coverage is changed. These new requirements should have no effect on the number of available lots for a development because right-of-way widths, pavement widths, bicycle lane widths and sidewalk requirements have not changed.

Following the Town Board work session on July 20, 2009, the engineering staff met with Mayor Vazquez and Steve Humann with TST Engineers. As a result of that meeting change to the standards included reducing minimum horizontal curve radii and tangents, minor changes in “K” values for vertical curves and revising sight distances at intersections. The language or specification for compound and reverse curves was also discussed and revised.

On September 28, 2009, the Town Board adopted, by resolution, the current street standards.

Staff Recommendation:

Cul-de-sacs are a popular form of closed-end street and are probably desired by most home buyers. However, cul-de-sacs are sometimes criticized by urban designers for encouraging car transport for even short distances as more direct connections are precluded by the geometry. Without a pedestrian outlet at the closed end of a cul-de-sac they typically discourage pedestrian connectivity within communities.

Staff’s intention was not to create a condition that makes cul-de-sacs exceptions to the rules and therefore recommends that Section 1.10 be amended as illustrated below. Proposed deletions are represented by strike-through and proposed additions are represented by red font.

1.01 NON-CONNECTIVE ROADWAYS

A. GENERAL

Through streets disperse traffic and provide for vehicle and pedestrian mobility in contrast to non-connective roadways that transfer vehicles onto collectors and arterials and discourage pedestrian transit **unless they include a pedestrian outlet at the closed-end**. Non-connective roadways consist of cul-de-sacs, hammerheads, eyebrows, knuckles, alleys and dead-ends. ~~Non-connective roadways actually increase traffic and safety problems and do not encourage pedestrian travel, and their design and use should be discouraged in new developments because of their effect of reducing the efficiency of traffic flow and circulation.~~

~~A cul de sac is a short, local access street having one end open to traffic and being permanently terminated by a circular turn around for vehicles. Cul de sacs are used when a developer can either not continue the current path of a street (because of a wetland or other topographical constraint) or chooses not to continue the established street layout. Although considered a popular design configuration, cul de sacs present several operation and maintenance problems for the Town of Windsor. Unlike through streets, which typically have a driveway access every fifty to eighty (50' to 80') feet, typical cul de sacs have between five and seven (5 & 7) accesses intersecting them in very short intervals. Although the Town does not plow cul de sacs, the home owner's association is forced to plow snow into a pile in the middle because otherwise the driveways get buried beneath mounds of snow. Cul de sacs reduce emergency vehicle response time and they have a negative affect on the orderly growth and street patterns of the Town.~~

Hammerheads and eyebrows are similar to cul-de-sacs; short, local streets having one end open to traffic and being permanently terminated by a turn-around (with some geometric variation to the cul-de-sac bulb) that allow for vehicle turnarounds, usually requiring at least one backing movement. Knuckles are expanded areas of roadway that allocate greater turning radii at sharp turns to make allowance for larger design vehicles. Alleys provide access to the side or rear of individual parcels and are characterized by a narrow right-of-way and pavement width. A dead-end is a short, local street that is planned to be extended with future development.

1. Permanent no-outlet streets shall be in the form of a cul-de-sac; allowed solely on local streets and only when **necessary**. ~~and where specifically permitted upon review and approval by the Town Engineer. Hammerhead design for no outlet streets are allowed only upon approval by the Town Engineer.~~
2. Most cul-de-sac design commonly uses a circular pavement symmetrical about the centerline of the street, sometimes with a central island. Although this type of cul-de-sac operates satisfactorily, better operation is obtained if the design is offset so that the entrance-half of the pavement is in line with the approach-half of the street. One steering reversal is avoided in this design. ~~Offset cul-de sacs are permitted only upon approval of the Town Engineer.~~
3. ~~From a stormwater perspective, cul de sacs create a huge bulb of impervious cover, increasing the amount of stormwater runoff. Designers should consider and pursue innovative cul de sac designs that reduce the total amount of impervious surface.~~
4. Cul-de-sacs are a tool, that when used sparingly, can help developers build balanced and attractive developments, however, like any other tool, cul-de-sacs have benefits and disadvantages and need to be used only in the right circumstances.
5. Cul-de-sacs shall not be used to avoid connection with an existing street, to avoid the extension of a thoroughfare or Collector street, or to avoid connection to adjoining property. In general, cul-de-sacs shall not be used to provide access to development on the boundary of the development.

6. No-outlet streets without a cul-de-sac (temporary dead-ends) shall not be allowed unless planned and designed to connect with a future street.
 - a. If the temporary no-outlet street is longer than one hundred fifty (150') feet, or serves as primary access to any lot, a temporary turn-around or a temporary paved connection to another street shall be provided.
 - b. At least a ninety (90') foot temporary turn-around easement shall be provided when needed on temporary dead-end streets; the temporary turn-around pavement shall be an eighty (80') foot diameter, paved roadway. Any lots encumbered with a temporary turnaround easement and roadway, shall not be built on until the road is extended.
 - c. Where a street is indicated to end into an adjacent unplatted area, the developer shall provide written approval from the adjacent landowner to discharge storm drainage from the street onto the adjacent land, and verification that the storm drainage will be properly detained.
 - d. All stub streets (dead-ends) shall be constructed as a part of the development project. End of road markers, per Town of Windsor Standard Details, shall be installed on all stub streets that do not end on a cul-de-sac.
 - e. Temporary dead-ends shall not exceed six hundred (600') feet in length.

B. DESIGN CRITERIA

1. Cul-de-sac streets shall have a maximum length of six hundred (600') feet (measured along the centerline, from the centerline of the intersecting street to the center point of the bulb), or a maximum of twenty-five (25) lots on a Local Residential street. The right-of-way for a cul-de-sac shall conform to the right-of-way requirements for the specific street classification leading to the cul-de-sac. Where one cul-de-sac extends from another cul-de-sac, the end of each cul-de-sac shall be no more than six hundred (600') feet from a general circulation street as measured by the centerline of the streets.
2. Typical radii for a cul-de-sac with an entrance right-of-way width of fifty (50') feet shall be as follows:
 - a. Right-of-way bulb radius shall be a minimum of fifty two (52') feet;
 - b. Flow line radius of the cul-de-sac bulb shall be forty five (45') feet;
 - c. Flow line radius where the entrance stem turns into the cul-de-sac bulb shall be thirty six (36') feet.

3. Surface drainage on a cul-de-sac shall be toward the intersecting street, or if that is not possible, a drainage outlet and right-of-way shall be provided from the cul-de-sac. The cul-de-sac turnaround shall have a maximum grade of three (3%) percent. The minimum grade around the curbing shall not be less than seven tenths (0.7%) percent.
4. Eyebrows shall be used only on Local streets and are allowed only upon approval by the Town Engineer. Eyebrows shall be a minimum of twenty eight (28') feet in width and a maximum of one hundred (100') feet in length measured along the flowline. Curb and gutter and sidewalks are required for all eyebrows.
5. Knuckles shall be used only on Local streets and are allowed only upon approval by the Town Engineer. Knuckles shall have a maximum extension beyond the original curb flowline of ten (10') feet and a maximum length of one hundred fifty (150') feet measured along the flowline of the curb and gutter, unless specifically waived by the Engineer. Curb and gutter and sidewalks are required for all knuckle designs.
6. Bulb-outs, or ox-bows, shall be used only on Local streets and are allowed only upon approval by the Town Engineer. Bulb-outs, or ox-bows, shall have a maximum extension beyond the original curb flowline based on a ratio of the length of ox-bow to depth of four to one (4:1) and a maximum length of one hundred fifty (150') feet measured along the flowline of the original curb and gutter, unless specifically waived by the Engineer. Curb and gutter and sidewalks are required for all bulb-outs/ox-bow designs.
7. Alleys should be aligned parallel to, or concentric with, the street property lines and situated in such a manner that both ends of the alley are connected either to streets or to other alleys.
8. New permanent dead-end streets are prohibited. Temporary dead-end streets are permitted only on streets that have no direct access from adjoining property and shall be planned to extend into neighboring property during a later development phase or project. They shall allow for the proper extension of the storm drains, sanitary sewer system, water lines, non-potable water lines and other utilities, where applicable. The road must be fully constructed to the property line, with a temporary paved turnaround. No curb and gutter is required on temporary turnarounds.



FUTURE TOWN BOARD MEETINGS

Work Sessions & Regular Meetings will be held in the Board Chambers unless otherwise noted.

July 1, 2013 6:00 p.m.	Town Board Work Session International Building Code (sump pump & greywater Impact Fees as it relates to heavy industry (oil & gas)
July 8, 2013 5:30 p.m. First floor conference room	Board/Manager/Attorney Monthly Meeting Recreation Center expansion de-brief and next steps
July 8, 2013 6:00 p.m.	Town Board Meeting Kern Board Meeting
July 15, 2013 5:30 p.m. 6:45	Town Board Work Session CIP tour – start at National Guard Facility Great Western Development & Great Western Railroad update and discussion
July 22, 2013 6:00 p.m.	Town Board Work Session Joint work session with Planning Commission
July 22, 2013 7:00 p.m.	Town Board Meeting
July 29, 2013	Fifth Monday
August 5, 2013 6:00 p.m.	Town Board Work Session Citizen's Survey review
August 12, 2013 5:30 p.m. - First floor conference room	Board/Manager/Attorney Monthly Meeting
August 12, 2013 7:00 p.m.	Town Board Meeting
August 19, 2013 6:00 p.m.	Town Board Work Session
August 26, 2013 6:00 p.m.	Town Board Work Session Joint work session with the Downtown Development Authority
August 26, 2013 7:00 p.m.	Town Board Meeting
September 2, 2013	Labor Day – Offices closed
September 9, 2013 5:30 p.m. – First floor conference room	Board/Manager/Attorney Monthly Meeting
September 9, 2013 7:00 p.m.	Town Board Meeting Kern Board Meeting
September 16, 2013 6:00 p.m.	Town Board Work Session
September 23, 2013 6:00 p.m.	Town Board Work Session
September 23, 2013 7:00 p.m.	Town Board Meeting

September 30, 2013

Fifth Monday

Additional Events

October 12, 2013

Budget work session

Future Work Session Topics

None.