

## STAFF REPORT FOR PLANNING COMMISSION MEETING OF MAY 30, 2018

**FILE NO:** ZCA-18-074

**AGENDA ITEM:** G.6

**STAFF CONTACT:** Hope Sullivan, AICP, Planning Manager

**AGENDA TITLE:** For Possible Action: To make a recommendation to the Board of Supervisors regarding a Zoning Code Amendment, and ordinance amending Title 18 Appendix of the Carson City Municipal Code, Development Standards Division 15, Water, Sewer, Reclaimed Water Standards, to revise certain guidelines for sewer design criteria.

**STAFF SUMMARY:** Section 15.3.2 of the Design Standards provides for sewer design criteria. The proposed amendment to the Standards addresses sewer main pipe sizing based on design peak flow data, and creating a capacity distinction based on pipe size.

**RECOMMENDED MOTION:** "I move to recommend to the Board of Supervisors approval of ZCA-18-074, an Ordinance amending Title 18, Zoning, Appendix A (Development Standards) Division 15.3.2 (Sewer Design Criteria) to modify Main Analysis with respect to pipe size and capacity and providing other matters properly relating thereto."

**LEGAL REQUIREMENTS:** CCMC 18.02.075 (Zoning Map Amendments and Zoning Code Amendments); NRS 278.260.

**KEY ISSUES:**

The proposed ordinance would modify the sewer design criteria to clarify the sewage collection area, and to clarify the capacity measurement.

**DISCUSSION:**

Per CCMC 18.02.075, the Planning Commission conducts a public hearing on a request to amend the Zoning Code, and makes a recommendation to the Board of Supervisors.

CCMC 18.16 is the Development Standards. The standards must be utilized during the City's review process of projects and are intended to promote quality design of projects for the health, safety, and welfare of Carson City. The improvement and design standards have been prepared to ensure that proposed projects meet minimum infrastructure service levels and safety requirements for the benefit of all City residents.

The Planning Division Director and the City Engineer are responsible for implementation of the Development Standards, and will update them periodically. Updates are proposed to the Planning Commission for a recommendation of approval or denial to the Board of Supervisors. After a hearing by the Planning Commission, any update to the Development Standards must be approved by the Board through the ordinance process.

The proposed amendment is as follows (proposed language is underlined):

15.3.2 Sewer Design Criteria.

a. Main Analysis.

Sewer mains shall be analyzed to determine system capability to provide capacity for the ultimate tributary population with the calculations provided to the City. Sewage collection

systems for a given area shall be sized to carry the design peak hourly flow from the entire tributary area at buildout even if the tributary area is not within the project boundaries, unless deemed unnecessary by the City Engineer. Projects with less than ten (10) dwelling units or less than two hundred (200) fixture units are exempt from this criteria. Flow generation and peaking factors shall be per recommended standards for wastewater facilities (ten (10) state standards). Sewer mains are considered at capacity when the design peak flow is at depth/diameter (d/D) = 0.50 for pipes less than or equal to 15-inches in diameter and d/D = 0.75 for pipes greater than 15-inch in diameter. Main analysis shall include a narrative report submitted to the utilities department with maps and calculations addressing the following: *(no additional changes are proposed.)*

#### **PUBLIC COMMENTS:**

On May 13, 2018, public notice of this proposed Zoning Code Amendment was published in the newspaper and posted on the City's website pursuant to the provisions of NRS and CCMC. As of the writing of this staff report, no public comments were received. Any comments that are received after this report is complete will be submitted prior to or at the Planning Commission meeting, depending on their submittal date to the Planning Division.

#### **FINDINGS:**

The Commission, in forwarding a recommendation to the Board for approval of a Zoning Code Amendment, shall make the findings of fact found in CCMC 18.02.075(5). The following findings are recommended by staff:

**1. That the proposed amendment is in substantial compliance with and supports the goals and policies of the Master Plan.**

*Goal 1.1 of the Master Plan states "Promote the efficient use of available land and resources."*

*Policy 1.1a further discusses a balanced land use plan. This policy states:*

*"Ensure that the City's Land Use Map represents a level of growth that may be accommodated with available water resources and sewer capacity. The City should monitor growth trends and conduct periodic reviews of the City's growth capacity to ensure the Master Plan is consistent with the recommendations of the City's Water and Wastewater Master Plans."*

*The proposed amendment is consistent with Policy 1.1.a as it helps to ensure that utility improvements, particularly sewer improvements, are properly sized to serve the areas identified for growth and development.*

**2. That the proposed amendment will provide for land uses compatible with existing adjacent land uses and will not have detrimental impacts to other properties in the vicinity.**

*The proposed amendment will not compromise land use compatibility, and will not have a detrimental impact to other properties. Rather, the proposed amendment will ensure that infrastructure intended to supported development and growth is properly sized for the area it will be serving.*

3. **That the proposed amendment will not negatively impact existing or planned public services or facilities and will not adversely impact the public health, safety and welfare.**

*The proposed amendment will positively impact public services in that it will allow for a better planned out sewer system. The current standards allows a capacity of 75 percent full for pipes with 15 inch diameters and smaller, which does not provide enough available capacity to account for blockages, flow surges or other factors that could risk the possibility of sewer overflows. The proposed criteria is consistent with industry standards, and will improve public health, safety and welfare.*

Attachment:

- 1) Draft ordinance
- 2) Application ZCA-18-074

Summary: An ordinance amending and clarifying sewer main pipe sizing based on design peak flow data, and creating a capacity distinction based on pipe size.

BILL NO. \_\_\_\_

ORDINANCE No. 2018 - \_\_\_\_

AN ORDINANCE RELATING TO SEWER DESIGN CRITERIA; AMENDING TITLE 18 (ZONING), APPENDIX A (DEVELOPMENT STANDARDS), DIVISION 15 (WATER, SEWER, RECLAIMED WATER STANDARDS) OF THE CARSON CITY MUNICIPAL CODE TO MODIFY AND CLARIFY REGULATIONS GOVERNING SEWER DESIGN CRITERIA RELATIVE TO MAIN ANALYSIS, AND PROVIDING OTHER MATTERS PROPERLY RELATED THERETO.

The Board of Supervisors of Carson City do ordain:

SECTION I:

That Title 18 (Zoning), Chapter 18.16 (Development Standards), Division 15 (Water, Sewer, Reclaimed Water Standards) is hereby amended as (**bold, underlined** text is added, ~~{stricken}~~ text is deleted) as follows:

**15.3.2 Sewer Design Criteria.**

a. Main Analysis

Sewer mains shall be analyzed to determine system capability to provide capacity for the ultimate tributary population with the calculations provided to the City. **Sewage collection systems for a given area shall be sized to carry the design peak hourly flow from the entire tributary area at buildout even if the tributary area is not within the project boundaries, unless deemed unnecessary by the City Engineer.** Projects with less than ten (10) dwelling units or less than two hundred (200) fixture units are exempt from this criteria. Flow generation and peaking factors shall be per Recommended Standards for Wastewater Facilities (Ten State Standards). Sewer mains are considered at capacity when **the design** peak flow is at **depth/diameter (d/D = 0.50 for pipes less than or equal to 15-inches in diameter and d/D=0.75 for pipes greater than 15-inch in diameter.** ~~75.~~ Main analysis shall include a narrative report submitted to the Utilities Department with maps and calculations addressing the following:

- S Area of project
- S Tributary areas outside project

- S Adjacent areas
- S Contours usually extending a minimum of three hundred feet (300') beyond the project or as needed to evaluate localized tributary areas
- S Line layout, pipe size and slope
- S Predicted average and peak flows at major junction points including flow coming from outside the project area
- S Direction of flow
- S Zoning used to predict flows
- S Special areas such as hospitals, schools, large office or industrial buildings, etc.
- S Boundaries of areas within the project which are tributary to points of major flow
- S Floodplains
- S Scale
- S Predicted flow from each area
- S Peaking factors
- S Cumulative flow
- S Pipe capacities and depths of flow

b. Sewer Size and Lateral

The minimum size for sewer mains shall be eight inches (8") and laterals shall be four inches (4"). Mains shall be sized as required by flow calculations. Sewer lines shall be PVC SDR-35 unless otherwise approved.

c. Standard Details

The installation of all new sewer lines shall conform to the "Standard Details for Public Works Construction", as adopted by Carson City.

d. Service Lateral

Each parcel shall be served by a separate sewer service lateral unless otherwise approved by the Utilities Department.

Sewer service laterals shall be located as per Standard Detail titled "Typical Utility Laterals Locations", unless otherwise approved by the Utilities Department. See Standard Details titled "Sewer Lateral Connection Detail" and "Sewer Service Saddle Detail". All service laterals, except those located in cul-de-sacs, shall be installed perpendicular to the main.

Sewer service laterals are not to be connected to manholes without prior approval of the City Engineer.

e. Design Velocity

Two feet (2') per second minimum, ten feet (10') per second maximum for the design condition.

f. Mannings Formula

Mannings formula shall be used in determining slope, velocity, design flow and diameter.

g. Slope

Minimum pipe slope shall be as required to achieve the minimum velocity of two feet (2') per second unless otherwise approved and as listed in the table below.

| <u>Size</u> | <u>Minimum Slope</u> |
|-------------|----------------------|
| 8"          | 0.4%*                |
| 10"         | 0.25%                |
| 12"         | 0.19%                |
| 15"         | 0.14%                |

\*Minimum slope for 8" PVC SDR-35 flexible pipe

The design engineer shall submit velocity and depth calculations for sewers less than minimum slope for review and approval prior to preparation of design drawings. For pipe slopes less than 0.4%, the design engineer shall place the following note in a prominent location on each plan/profile sheet with slopes less than 0.4%; "The contractor shall use due care in installing sewer mains". Minimum pipe slope for dead end sewers shall be 0.5% of a percent unless it can be shown by calculations that the velocity in the pipe is two (2) fps or greater. Dead end sewers shall generally end in a manhole. Dry sewers which shall be extended at a future date and installed without a manhole shall be certified as-built for line and grade by a Nevada professional engineer or land surveyor prior to backfill. The engineer shall place a note in a prominent location on each plan/profile sheet including the as-built requirement.

h. Sanitary Sewer Design Atandards and Specifications - Alignment

1. Horizontal. Sewer line less than twenty-four inches (24") in diameter shall be straight between manholes and generally parallel with the street or easement centerline whenever possible.

Sewer lines twenty-four inches (24") and larger may be considered for horizontal curvature when approved by the department.

2. Vertical. Sewer lines with vertical curvature shall not be allowed. (Ord. 1977-12 (part), 1977).

i. Sanitary Sewer Design Standards and Specifications - Manholes and Laterals

Standard manholes shall be installed at the end of each line with continuing stubout; at all intersections of other sewer lines; at all changes in grade, size or alignment.

1. Spacing. Maximum spacing for manholes shall be four hundred feet (400') for all lines smaller than fifteen inches (15"), and five hundred feet (500') for lines fifteen inches (15") to twenty-four inches (24"), and six hundred feet (600') for twenty-four inches (24") and larger.
2. Increasing Size. When a smaller sewer flows into a larger sewer, the invert of the larger sewer shall be lowered sufficiently to maintain the same energy gradient. An approximate method for obtaining this result is to place the crown at the same elevation for both pipes. The average energy gradient line shall be derived from anticipated full flow capacities of the pipes.
3. Drop Manholes. A drop connection shall be provided for a sewer entering a manhole at an elevation two feet (2') or more above the manhole invert. When the difference in elevation between the incoming sewer and the manhole invert is less than two feet (2'), the manhole invert shall be filleted and channeled to prevent deposition of solids. The drop connection shall be constructed in accordance with standard detail requirements for manhole installation. Supporting calculations for hydraulic efficiency through manholes that do not meet the above requirements shall be submitted to the department for approval. Drop manholes shall be sixty inch (60") diameter.
4. General. Manholes shall be installed at the end of all sewer mains, at all intersections of mains, and changes of grade, size, or alignment. One foot (1') stubs shall be provided at manholes for sewer mains which may be extended in the future. When extending a sewer main from an existing manhole without a stub, the existing manhole base shall be removed and replaced. Sewer mains entering manholes shall have a minimum one-tenth of a foot (0.1') of fall across the manhole and a maximum two-tenth of a foot (0.2') of fall across the manhole. Two-tenths of a foot (0.2') of fall may be exceeded when matching crowns of different pipe

diameters. Manholes with the angle between the entering sewer main and existing sewer main less than seventy-five (75) degrees shall be sixty inches (60") diameter and maintain two-tenths of a foot (0.2') of fall.

Watertight manhole covers shall be used in designated floodplains and in locations where covers may be flooded by local runoff.

5. Dead End Sewers. Dead end sewers shall generally end in a manhole. Dry sewers which shall be extended at a future date and installed without a manhole shall be certified as-built for line and grade by a Nevada professional engineer or land surveyor prior to backfill.

Each parcel shall be served by a separate sewer service lateral unless otherwise approved by the Utilities Department.

j. Separations

Separation of lines: Definitions. As used in Nevada Administrative Code (NAC), Chapter 445A, unless the context otherwise requires:

1. "Sewer main" includes"
  - (a) A sewer main of a sanitary sewer, storm sewer or any other type of sewer; and
  - (b) Any unidentified conduit with a diameter that exceeds six inches (6").
2. "Sewer service lateral" includes:
  - (a) A sewer service lateral of a sanitary sewer, storm sewer or any other type of sewer; and
  - (b) Any unidentified conduit with a diameter of not more than six inches (6").

Separation of lines: Sewer main parallel to water main or water service lateral. If a sewer main parallels a water main or water service lateral:

1. Whenever possible, the sewer main must be located lower than the water main or water service lateral.
2. Except as otherwise provided in subsection 3, the sewer main must be in a separate trench, and



- (a) Located at least ten feet (10') away from the water main or water service lateral, as measured horizontally from the exterior walls of the pipes;
  - (b) If compliance with paragraph (a) is not practicable, located:
    - (1) At least five feet (5') away from the water main or water service lateral; as measured horizontally from the exterior walls of the pipes; and
    - (2) At least eighteen inches (18") lower than the water main or water service lateral, as measured vertically from the exterior walls of the pipes; or
  - (c) If compliance with neither paragraph (a) nor paragraph (b) is practicable, located at least six feet (6') away from the water main or water service lateral, as measured horizontally from the exterior walls of the pipes. If the sewer main:
    - (1) Is in place at the time a water project is performed, the sewer main must, except as otherwise provided in subparagraph (3), be totally encased in at least four inches (4") of cement slurry;
    - (2) Is not in place at the time a water project is performed, the sewer main must, except as otherwise provided in subparagraph (3), be constructed of PVC with joints that comply with Standard D3212 of the American Society for Testing and Materials; or
    - (3) Is part of a storm sewer and has a diameter of not less than twenty-four inches (24"), the sewer main must be installed with watertight joints that use joint sealants or joint gaskets.
3. If compliance with the requirements for separation set forth in subsection 3 are not practicable:
- (a) The water main or water service lateral must be encased in at least four inches (4") of cement slurry; and
  - (b) The sewer main must comply with the requirements of subparagraphs (1), (2) and (3) of paragraph (c) of subsection 2.

Separation of lines: Sewer service lateral parallel to water main or water service lateral. If a sewer service lateral parallels a water main or water service lateral, the sewer service lateral must be in a separate trench, and

1. Located:
  - (a) At least twelve inches (12") lower than the water main or water service lateral, as measured vertically from the exterior walls of the pipes; and
  - (b) At least forty-eight inches (48") away from the water main or water service lateral, as measured horizontally from the exterior walls of the pipes; or
2. If compliance with subsection 1 is impracticable, located in such a manner as is authorized by the Health Division.

Separation of lines: Sewer main crossing water main. If a sewer main crosses a water main:

1. The sewer main must be located at least eighteen inches (18") lower than the water main, as measured vertically from the exterior walls of the pipes; or
2. If compliance with subsection 1 is impracticable:
  - (a) A reasonable effort must be made to place the pipeline joints of the sewer main and water main, other than any welded joints, an equal distance from the point of crossing;
  - (b) The sewer main and water main must be:
    - (1) Located at least six inches (6") apart, as measured vertically from the exterior of the pipes; and
    - (2) Provided with such structural support as the supplier of water determines necessary; and
  - (c) The area of crossing must be constructed in such a manner that:
    - (1) The sewer main is constructed of materials that comply with Standard Specifications for Public Works Construction and the American Water Works Association Standards for Water System Materials;

- (2) The sewer main consists of PVC which is constructed with joints that comply with Standard D3212 of the American Society for Testing and Materials;
- (3) The sewer main or water main is totally encased in at least four inches (4") of cement slurry for a distance of at least ten feet (10') on each side of the point of crossing; or
- (4) The sewer main or water main is installed in a pipe sleeve that extends, without joints, at least ten feet (10') on each side of the point of crossing.

Separation of lines: Sewer main crossing water service lateral.

- 1. If a sewer main crosses a water service lateral, the sewer main must be located:
  - (a) At least eighteen inches (18") lower than the water service lateral, as measured vertically from the exterior walls of the pipes; or
  - (b) If compliance with paragraph (a) is impracticable, in such a manner as is authorized by the Health Division.
- 2. If a water service lateral is in place at the time a sewer main is constructed and must be relocated to comply with this section, the relocation must be performed:
  - (a) With the approval of an in accordance with the procedures and standards of the supplier of water; or
  - (b) If compliance with paragraph (a) is impracticable, in such a manner as is authorized by the Health Division.

Separation of lines: Sewer service lateral crossing water main or water service lateral.

- 1. If a sewer service lateral crosses a water main or water service lateral, the sewer service lateral must be located:
  - (a) At least twelve inches (12") lower than the water main or water service lateral, as measured vertically from the exterior walls of the pipes; or

- (b) If compliance with paragraph (a) is impracticable, in such a manner as is authorized by the Health Division.
- 2. If a water main or water service lateral is in place at time a sewer service lateral is constructed and must be relocated to comply with this section, the relocation must be performed:
  - (a) With the approval of and in accordance with the procedures and standards of the supplier of water; or
  - (b) If compliance with paragraph (a) is impracticable, in such a manner as is authorized by the Health Division. (Added to NAC by Board of Health, eff. 2-20-97.)

Separation of lines: Lines across surface water.

- 1. A supplier of water shall consult with the health authority before preparing any plans for the construction of a pipeline of the public water system across any surface water, regardless of whether the crossing will be over or under the surface of the water.
- 2. If the pipeline will cross over the surface of the water, the pipe must be adequately supported and anchored, protected from damage and freezing, and accessible for repair and replacement.
- 3. Except as otherwise provided in subsection 4, if the pipeline will cross under the surface of the water, the pipe must be:
  - (a) Covered with at least five feet (5') of backfill; and
  - (b) Enclosed in a pipe sleeve or encased with at least four inches (4") of cement slurry.
- 4. If the pipeline will cross under the surface of a channel of water that is fifteen feet (15') or more wide:
  - (a) The pipe must be constructed with watertight mechanical joints that are capable of deflection.
  - (b) Isolation valves must be located at both ends of the crossing in such a manner that the length of the crossing can be isolated for testing, repair and sampling. The isolation valves must be easily accessible and must not be subject to flooding. The isolation valve closest to the source of the supply of water must be located in a manhole or valve chamber which is large enough for human access.

The manhole or valve chamber must contain a permanent sampling tap and means for pressure testing the pipe.

- (c) The pipe must be enclosed in a pipe sleeve or encased with at least four inches (4") of cement slurry.

Water mains in conflict with sewer, storm drain and reclaimed water lines shall be adjusted as per Standard Detail titled "Lowering Water Mains". Other means for separation shall require approval of the Utilities Department.

k. Interceptor Connections

Sewer service laterals shall not be directly connected to sewer interceptors and sewer service laterals shall not be directly connected to sewer interceptor manholes without prior approval by the Utilities Department. A sewer interceptor is defined as any sewer main larger than twelve inches (12") in diameter. Sewer service laterals may be connected to a parallel sewer main which is connected to an existing interceptor manhole.

l. Inverted Siphons

The design of siphons shall not be undertaken until approved by the City Engineer. The siphons shall not have less than two (2) barrels, with a minimum pipe size of eight inches (8"), and shall be provided with the necessary appurtenances for convenient flushing and maintenance. The manholes shall have adequate clearances for rodding. Sufficient head and pipe sizes shall be designed to obtain minimum velocities of three feet (3') per second for average flow. The inlet and outlet details shall be arranged so that normal flow is diverted to one (1) barrel and so that either barrel may be removed from service for cleaning.

m. Sewer Main Televising

All sewer mains shall have a television inspection prior to acceptance by the City and prior to paving, if applicable. All sewer mains and manholes shall be clear of debris prior to televising. Debris shall not be washed into existing sewer mains and shall be pumped to an approved disposal location or vacuumed. If sewer mains and manholes are not adequately cleaned prior to television inspection, the contractors shall be charged for cleaning and/or retelevising expenses incurred by the City.

n. Well Meters

For new development only, private well water meters are required for property connected to city sewer and not connected to city water. Meter

location and type shall be approved by the Utilities Department prior to installation.

SECTION II:

That no other provisions of Title 18 of the Carson City Municipal Code are affected by this ordinance.

PROPOSED on \_\_\_\_\_, 2018.

PROPOSED by \_\_\_\_\_.

PASSED \_\_\_\_\_, 2018.

VOTE:   AYES:   SUPERVISORS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

          NAYS:   SUPERVISORS: \_\_\_\_\_  
\_\_\_\_\_

          ABSENT: SUPERVISORS: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Robert Crowell, Mayor

ATTEST:

\_\_\_\_\_  
SUE MERRIWETHER  
CLERK/RECORDER

This ordinance shall be in force and effect from and after the \_\_\_\_\_ day of \_\_\_\_\_, 2018.

Carson City Planning Division  
108 E. Proctor Street- Carson City NV 89701  
Phone: (775) 887-2180 • E-mail: [planning@carson.org](mailto:planning@carson.org)

For Office Use Only:

## ZONING CODE AMENDMENT

**FILE # ZCA – 18 -**

**FEE:** \$3,250.00 + noticing fee

**APPLICANT**

Carson City Public Works (Dan Stucky, PE / City Engineer)

Application Form, Written Project Description and  
Supporting Documentation  
6 Completed Application Packets (1 Original + 5  
Copies)

**MAILING ADDRESS, CITY STATE, ZIP**

3505 Butti Way, Carson City, NV 89701

**Application Reviewed and Received By:**

**PHONE #**

775-283-7084

**FAX #**

775-887-2112

**Submittal deadline:** see attached PC application submittal  
schedule.

**Note:** Submittals must be of sufficient clarity and detail such  
that all departments are able to determine if they can support  
the request. Additional Information may be required.

**EMAIL ADDRESS**

[dstucky@carson.org](mailto:dstucky@carson.org)

Requested Amendment to Development Standards: \_\_\_\_\_ or Title 18 \_\_\_\_\_

Amending Title 18, Appendix Title 18 Appendix of the Carson City Municipal Code To Revise Certain Guidelines For  
Sewer Design Criteria (see attached for detail).

Required Findings: Title 18 of the Carson City Municipal Code (CCMC) requires that the applicant must present evidence justifying the revision to the Code, that the proposed addition/deletion will be consistent with the objectives of the Master Plan and will not be detrimental to the surrounding properties. A statement relative to findings from Page 2 **MUST** be included herewith, or on an attached sheet.

Please remember that the requested code revision will affect **all** of Carson City and not only your parcel of land. Present your statement with that in mind. In addition to the brief description of your project and proposed use, provide additional page(s) to show a  
The following statements address the 3 findings:

1. The proposed amendment supports the goals and policies of the Master Plan as the changes to the sewer capacity limits will help balance future growth with sewer capacity as outlined as a principle for achieving a Balanced Land Use Pattern. The proposed changes will align with industry design standards and lead to providing a sewer system with capacity to adequately convey current sewer flows, as well as to support additional flows from future growth.

2. N/A. No impact to land uses.

3. The proposed amendment will benefit the sewer infrastructure and better planned out sewer system for the future. The opinion of Public Works staff is that currently allowing a capacity of 75% full for pipes with 15-inch diameter and smaller does not provide enough available capacity to account for blockages, flow surges or other factors that could risk the possibility of sewer overflows. Engineering staff has reviewed the allowable capacity limits for other regional agencies, as well as industry standards across the country, and has proposed updated criteria consistent with these standards and sound engineering practices.

ACKNOWLEDGMENT OF APPLICANT:

I certify that the foregoing statements are true and correct to the best of my knowledge and belief.

Applicant's signature

Date

## APPLICATION FOR A CHANGE IN THE ZONING CODE

### WHAT ARE THE "FINDINGS" THAT MUST BE SUPPORTED?

The Carson City Municipal Code (CCMC 18.02.075) sets out the required findings.

1. That the proposed amendment is in substantial compliance with and supports the goals and policies of the Master Plan.
2. That the proposed amendment will provide for land uses compatible with existing adjacent land uses and will not have detrimental impacts to other properties in the vicinity.
3. That the proposed amendment will not negatively impact existing or planned public services or facilities and will not adversely impact the public health, safety and welfare.

In order to meet the requirement that "proof of satisfying the findings come from the applicant", some background work may be required to provide the facts and evidence.

1. Review the goals and policies listed in the Master Plan and identify those recommendations that support the proposal. The applicable Master Plan goals and policies are attached to this application. A copy of the Master Plan is available on the City website ([www.carson.org](http://www.carson.org)), or obtain a CD disk at the Planning Division.
2. Look at the proposal objectively. Try to consider what you would feel if you lived next door and someone were proposing this change of zoning code next to your business or home.
3. The more information assembled before turning the project into the Planning Division helps to ensure that there are few or no "surprises" when other departments and agencies look at the proposal.

Complete information provided with the application makes it easier for the Planning Commission and the Board to arrive at their decision.

Remember, it's your job to ensure that the Planning Commission and Board have the information to make the required findings. The Planning Division can offer some help, but cannot do the work for you. If you have any questions, please give us a call.

PLEASE LIST EACH QUESTION ABOVE AND RESPOND IN  
OUR OWN WORDS TO SUPPORT YOUR REQUEST



### 15.3.2 Sewer Design Criteria.

a. Main Analysis. Sewer mains shall be analyzed to determine system capability to provide capacity for the ultimate tributary population with the calculations provided to the city. Sewage collection systems for a given area shall be sized to carry the design peak hourly flow from the entire tributary area at buildout even if the tributary area is not within the project boundaries, unless deemed unnecessary by the City Engineer. Projects with less than ten (10) dwelling units or less than two hundred (200) fixture units are exempt from this criteria. Flow generation and peaking factors shall be per recommended standards for wastewater facilities (ten (10) state standards). Sewer mains are considered at capacity when the design peak flow is at depth/diameter ( $d/D$ ) = 0.50 for pipes less than or equal to 15-inches in diameter and  $d/D = 0.75$  for pipes greater than 15-inch in diameter. Main analysis shall include a narrative report submitted to the utilities department with maps and calculations addressing the following: