



# STAFF REPORT

**Report To:** Board of Supervisors

**Meeting Date:** September 6, 2018

**Staff Contact:** Darren Schulz, Public Works Director

**Agenda Title:** For Possible Action: To introduce on first reading, Bill No. \_\_\_\_, an ordinance relating to sewer pipe design criteria; amending Title 18 Appendix (Carson City Development Standards), Division 15 (Water, Sewer, Reclaimed Water Standards) of the Carson City Municipal Code to establish certain sizing and peak flow requirements relating to sewer pipes; and making conforming changes in Title 12 (Water, Sewerage and Drainage), Chapter 12.06 (Industrial Wastewater Discharges – Sewer Design Standards). (Dan Stucky, Dstucky@carson.org)

**Staff Summary:** Section 15.3.2 of the Title 18 Appendix (Carson City Development 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.

**Agenda Action:** Ordinance - First Reading

**Time Requested:** 10 Minutes

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## **Proposed Motion**

I move to introduce on first reading Bill No. \_\_\_\_, an ordinance relating to sewer pipe design criteria as discussed and as published on the agenda.

## **Board's Strategic Goal**

Sustainable Infrastructure

## **Previous Action**

At its meeting of May 30, 2018, the Planning Commission recommended approval of the proposed Zoning Code Amendment by a vote of 7 ayes, 0 nays and 0 absent.

## **Background/Issues & Analysis**

The Board of Supervisors, pursuant to the Carson City Municipal Code, is required to take final action on all zoning code amendments. This is the first of two readings to amend Title 18 by ordinance. Please see the complete staff report to the Planning Commission for more information.

Attachments:

1. Ordinance
2. Planning Commission Staff Report
3. Planning Commission Meeting Minutes

## **Applicable Statute, Code, Policy, Rule or Regulation**

CCMC 18.02.075 (Zoning Code Amendments), NRS Chapter 244, NRS Chapter 278 and Article 2 of the Carson City Charter.

**Financial Information**

Is there a fiscal impact?  Yes  No

If yes, account name/number:

Is it currently budgeted?  Yes  No

Explanation of Fiscal Impact:

**Alternatives**

1. Deny the Zoning Text Amendment
2. Refer the matter back to the Planning Commission for further review.

**Board Action Taken:**

Motion: \_\_\_\_\_

1) \_\_\_\_\_

2) \_\_\_\_\_

Aye/Nay

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
(Vote Recorded By)

**Regular Meeting  
Carson City Planning Commission  
Wednesday, May 30, 2018 ● 3:30 PM  
Community Center Sierra Room  
851 East William Street, Carson City, Nevada**

**Commission Members**

<b>Chair – Mark Sattler</b>	<b>Vice Chair – Charles Borders, Jr.</b>
<b>Commissioner – Paul Esswein</b>	<b>Commissioner – Elyse Monroy</b>
<b>Commissioner – Teri Preston</b>	<b>Commissioner – Candace Stowell</b>
<b>Commissioner – Hope Tingle</b>	

**Staff**

Lee Plemel, Community Development Director  
Hope Sullivan, Planning Manager  
Dan Stuckey, City Engineer  
Dan Yu, Deputy District Attorney  
Tamar Warren, Deputy Clerk

**NOTE:** A recording of these proceedings, the board’s agenda materials, and any written comments or documentation provided to the recording secretary during the meeting are public record. These materials are on file in the Clerk-Recorder’s Office, and are available for review during regular business hours.

An audio recording of this meeting is available on [www.Carson.org/minutes](http://www.Carson.org/minutes).

**A. ROLL CALL, DETERMINATION OF QUORUM, AND PLEDGE OF ALLEGIANCE**

(3:35:44) – Chairperson Sattler called the meeting to order. Roll was called. A quorum was present. Commissioner Monroy led the Pledge of Allegiance.

<b>Attendee Name</b>	<b>Status</b>	<b>Arrived/Left</b>
Chairperson Mark Sattler	Present	
Vice Chairperson Charles Borders, Jr.	Present	
Commissioner Paul Esswein	Present	
Commissioner Elyse Monroy	Present	
Commissioner Teri Preston	Present	
Commissioner Candace Stowell	Present	
Commissioner Hope Tingle	Present	

**B. PUBLIC COMMENTS**

(5:36:42) – Chairperson Sattler entertained public comments. Suzanne Fox stated that she was under the impression that the Vintage Project was scheduled for discussion in this meeting; however, since it was not agendaized, she wished to have the Commission reexamine “all the variances and changes in the Master Plan” which the new developer had “inherited”.

**C. POSSIBLE ACTION ON APPROVAL OF MINUTES – March 28, 2018 and April 25, 2018.**

(3:38:46) – Mr. Yu explained for the record that the March 28, 2018 meeting minutes were not approved within the 45-day statutory deadline, because their approval had been postponed pending a clarification.

(3:38:31) – MOTION: I move to approve the minutes of March 28, 2018 and April 25, 2018 [as presented].

<b>RESULT:</b>	<b>APPROVED (7-0-0)</b>
<b>MOVER:</b>	Stowell
<b>SECONDER:</b>	Esswein
<b>AYES:</b>	Sattler, Borders, Esswein, Monroy, Preston, Stowell, Tingle
<b>NAYS:</b>	None
<b>ABSTENTIONS:</b>	None
<b>ABSENT:</b>	None

**D. MODIFICATION OF AGENDA**

None.

**E. RECESS AS THE PLANNING COMMISSION**

(3:39:40) – Chairperson Sattler recessed the Planning Commission.

**GROWTH MANAGEMENT COMMISSION**

**1. CALL TO ORDER, ROLL CALL AND DETERMINATION OF A QUORUM**

(3:39:40) – Chairperson Sattler Called the Growth Management Commission to order.

(3:39:54) – Roll Was called and a quorum was present.

**2. PUBLIC COMMENT**

(3:40:19) – Chairperson Sattler entertained public comment, noting that there will be a three-minute limit on comments. Mr. Plemel clarified that public comment will also be heard during the public hearing agenda item, adding that the commissioners will hear but are unable to reply to any comments at this time.

(5:40:54) – Maxine Nietz introduced herself and urged the Commission to avoid turning Carson City into California or Reno, adding “we don’t need a plethora of apartment buildings rising up to five and 10 stories”.

**3. FOR POSSIBLE ACTION: APPROVAL OF THE MINUTES – MAY 31, 2017.**

(3:42:10) – MOTION: I move to approve the minutes of May 31, 2017.

<b>RESULT:</b>	<b>APPROVED (4-0-3)</b>
<b>MOVER:</b>	Borders
<b>SECONDER:</b>	Esswein
<b>AYES:</b>	Sattler, Borders, Esswein, Monroy
<b>NAYS:</b>	None
<b>ABSTENTIONS:</b>	Preston, Stowell, Tingle
<b>ABSENT:</b>	None

#### 4. PUBLIC HEARING MATTERS

**4-A. GM-18-071 FOR POSSIBLE ACTION: TO RECOMMEND TO THE BOARD OF SUPERVISORS A RESOLUTION ESTABLISHING THE MAXIMUM NUMBER OF RESIDENTIAL BUILDING PERMIT ALLOCATIONS UNDER THE GROWTH MANAGEMENT ORDINANCE FOR THE YEARS 2019 AND 2020 AND ESTIMATING THE MAXIMUM NUMBER OF RESIDENTIAL BUILDING PERMITS FOR THE YEARS 2021 AND 2022; ESTABLISHING THE NUMBER OF BUILDING PERMIT ALLOCATIONS WITHIN THE DEVELOPMENT AND GENERAL PROPERTY OWNER CATEGORIES; AND ESTABLISHING A MAXIMUM AVERAGE DAILY WATER USAGE FOR COMMERCIAL AND INDUSTRIAL BUILDING PERMITS AS A THRESHOLD FOR GROWTH MANAGEMENT COMMISSION REVIEW.**

(3:42:47) – Chairperson Sattler introduced the item. Community Development Director Lee Plemel introduced himself and noted that the Commission will also hear from representatives of other City offices, present in the audience.

(3:44:23) – Mr. Plemel gave background and presented the Staff Report and late material, both of which are incorporated into the record. He also clarified that the Planning Commission will make a recommendation to the Board of Supervisors, the final approving body. Upon concluding his presentation, Mr. Plemel suggested authorizing 659 residential units and recommended that the industrial and commercial water threshold remain at 15,000 gallons per day for Growth Management Commission review. He noted that the City agencies' comments were included in the agenda materials, in addition to those from Michelle Joy, Carson Tahoe Health Administration, who was unable to be present. Mr. Plemel also responded to clarifying questions by the Commissioners.

(4:06:42) – At the request of Commissioner Stowell, Carson City School District Superintendent Richard Stokes introduced himself and noted that they have seen growth unlike previous years, and mostly at the elementary school level. He also believed that the 284 students at Carson Montessori School could be part of the Carson City School District, should that school close, a capacity they currently don't have and would require them to build a small new school.

(4:10:34) – Andrew (AJ) Feuling, Carson City School District Fiscal Services Director, praised Mr. Plemel's overlay of the approved developments' map onto the School District Map and stated that there was "obviously a concern for growth within the District", noting that historically, since 1980, the Carson City School District students comprised 13.3 to 15 percent of the total City population, and that they are "tracked over time". Mr. Feuling referenced a chart as part of the School District's memorandum, incorporated into the record, showing the projected growth and discussed how the District has managed the capacity issues. Commissioner Stowell inquired about revisiting attendance boundaries in the next few years "to create a better rezoning for all the different elementary schools" and to look into the socioeconomic changes. Mr. Feuling believed that these issues would be "looked at seriously" and by utilizing the City's "great GIS system". He cited the example of having additional room at Eagle Valley Middle School and how they could reallocate capacity. Discussion ensued regarding classroom utilization and adding to existing schools versus building new schools, and Commissioner Monroy was informed that a Facilities Master Plan existed but "needs to be prettier" prior to making it publicly available. Mr. Feuling explained that the new construction would address school safety issues such as "single point of entry". Mr. Stokes believed in limiting the number of elementary school students to 650 and gave the example of how they were working with the Lompa Ranch Development to dedicate a lot for a future school.

(4:39:53) – Commissioner Tingle expressed concern over middle and high school capacity issues once the elementary school students, who attend the newly built elementary schools, move up. Mr. Feuling explained that the elementary to middle and high school growth accommodates those graduating from private schools as well; however, some students opt to attend online high schools. Chairperson Sattler suggested discussing the infrastructure issues such as water and sewer.

(4:44:24) – Carson City Public Works Department Director Darren Schulz responded to Vice Chair Borders' questions regarding sewer capacity by noting that they monitor the in-flow on a monthly basis, which he believed fluctuates based on weather. He also attributed the reduction of average household usage to more efficient plumbing. Mr. Schulz also discussed the expansion plan, calling it “a relatively straight-forward design and construction”. Commissioner Stowell inquired about exemptions and about the Carson Hills Apartments allocations. Mr. Plemel clarified that “if [Carson Hills Apartments] pulled building permits for 370 units, there would need to be 370 Growth Management Allocations available for them to pull at that time.” He also noted that “a Growth Management Unit is only for the unit connecting to the water system”; therefore, residences requiring a well permit would not be required to obtain a Growth Management Allocation.

(4:50:48) – Commissioner Tingle noted that based on the census data, the median income in Carson City is \$49,832 with the median house sales price being \$292,896, making it unlikely for the median earner to afford a home. She also stressed the importance of looking into affordable homes. Discussion ensued regarding affordable housing and whether or not it related to Growth Management. Nikki Aaker, Carson City Health and Human Services Department Director, informed Commissioner Monroy that affordable housing is one of the Carson City Behavioral Health Task Force subcommittees. Commissioner Preston indicated that the middle income population issues were not being addressed and Ms. Aaker noted that they are looking into that as well, to the extent that they have changed the name of the taskforce to Workforce Housing. Commissioner Esswein was informed that after six months, the developer housing would become available on a “first come, first served” basis.

(4:59:36) – Chairperson Sattler entertained public comments.

## **PUBLIC COMMENT**

(4:59:55) – Aaron West, Sierra Nevada Builders Alliance, noted ‘we’re comfortable with the Growth Management numbers...[and] we’re excited to see the diversity housing products that [are] being submitted and brought to permit’. He indicated that they’ve seen, on average, a 50 percent increase in material costs in the last two years due to natural disasters and higher demand, and are faced with workforce availability issues. Mr. West also attributed the demand to “the job creation that’s taking place now and not the speculative development”, and wished to address the property tax implications of new construction in the future.

(5:03:03) – Maxine Nietz believed that “residential growth does not pay for itself”, calling it a known fact, as it reinforced the City’s inability to afford the services the families will require. She also stated that the City had approved homes on earthquake faults which would cause problems in the future and suggested reducing the allocations “without bumping into somebody’s cap”. Ms. Nietz noted that “the developers always want higher density than what the land is zoned for”. There were no additional comments; therefore, Chairperson Sattler entertained a motion. Commissioner Monroy thanked all the agencies present in the meeting and stated that she was ready to make a motion.

**(5:06:55) – MOTION: I move to recommend to the Board of Supervisors approval of a maximum of 659 residential building permit entitlements for 2019, with an allocation of 283 entitlements for the general property owner category and 376 entitlements for the development category, and to continue the commercial and industrial development annual average water usage threshold of 15,000 gallons per day for Growth Management Commission review, and distribution and allocations for future years as further provided in the draft Board of Supervisors Resolution.**

<b>RESULT:</b>	<b>APPROVED (7-0-0)</b>
<b>MOVER:</b>	Monroy
<b>SECONDER:</b>	Stowell
<b>AYES:</b>	Sattler, Borders, Esswein, Monroy, Preston, Stowell, Tingle
<b>NAYS:</b>	None
<b>ABSTENTIONS:</b>	None
<b>ABSENT:</b>	None

**5. PUBLIC COMMENT**

(5:08:14) – Chairperson Sattler entertained public comments; however, none were forthcoming.

**6. FOR POSSIBLE ACTION: TO ADJOURN AS THE GROWTH MANAGEMENT COMMISSION.**

(5:08:21) – Chairperson Sattler adjourned the Growth Management Commission and recessed the meeting.

**F. RECONVENE AS THE PLANNING COMMISSION**

(5:17:10) – Chairperson Sattler reconvened the Planning Commission. Roll was called and a quorum was still present. He also entertained public comments; however, none were forthcoming.

**G. PUBLIC HEARING MATTERS**

**G.1 SUP-18-066 FOR POSSIBLE ACTION: TO CONSIDER A REQUEST FOR A SPECIAL USE PERMIT FOR A BILLBOARD ON PROPERTY ZONED GENERAL INDUSTRIAL (GI) LOCATED AT 8025 HWY 50 EAST, APN 008-611-04.**

(5:18:12) – Chairperson Sattler introduced the item. Ms. Sullivan presented the Staff Report and accompanying photographs, both of which are incorporated into the record. She also recommended approval and noted that Neil Johnson of YESCO Outdoor Media was present in the audience to answer questions. Commissioner Stowell observed that the property was not “in great shape” and that the sign was located “next to an abandoned structure of a sign”, with power lines going from the storage structure to the billboard, indicating she would “have a hard time” approving the SUP.

(5:21:13) – Mr. Johnson confirmed for Chairperson Sattler that he had agreed with the conditions of approval and that they were not planning on having any changes to the proposed grandfathered signs. He also offered to return with an answer to Commissioner Stowell’s question regarding the power lines. Commissioner Monroy was informed by Mr. Plemel that today’s standards would require an underground service line and offered to have Code Enforcement look into the abandoned sign. Vice Chair Borders revisited a former conversation regarding

renewal of billboard SUPs that “have standards that we don’t allow anymore”. Discussion ensued regarding 16-year-old standards and their relevance. There were no public comments.

**(5:25:48) – Motion: I move to approve SUP-18-066, a Special Use Permit request to allow the continuation of an existing a billboard sign on property zoned General Industrial (GI) located at 8025 Hwy 50 East, APN 008-611-04, based on the findings and subject to the conditions of approval in the Staff Report.**

<b>RESULT:</b>	<b>APPROVED (5-2-0)</b>
<b>MOVER:</b>	Sattler
<b>SECONDER:</b>	Monroy
<b>AYES:</b>	Sattler, Esswein, Monroy, Preston, Tingle
<b>NAYS:</b>	Borders, Stowell
<b>ABSTENTIONS:</b>	None
<b>ABSENT:</b>	None

**G.2 VAR-18-065 FOR POSSIBLE ACTION: TO CONSIDER A REQUEST FOR A VARIANCE TO THE FRONT, SIDE, AND REAR SETBACKS SO AS TO ALLOW SETBACKS OF SEVEN FEET, FIVE FEET, AND TEN FEET RESPECTIVELY WHERE THE REQUIRED SETBACKS ARE TEN FEET, TEN FEET AND 20 FEET RESPECTIVELY, ON PROPERTY ZONED RESIDENTIAL OFFICE (RO) LOCATED AT 213 SOUTH NEVADA STREET, APN 003-114-08.**

(5:26:41) – Chairperson Sattler introduced the item. Ms. Sullivan presented the agenda materials which are incorporated into the record and responded to clarifying questions. She also introduced applicants David and Dawn Moores who were present in the audience.

(5:33:21) – Mr. and Mrs. Moores introduced themselves and noted their agreement to the conditions of approval presented as part of the Staff Report. There were no public comments; therefore Chairperson Sattler entertained a motion. Commissioner Esswein suggested revisiting the setbacks in the Downtown District in the future. Mr. Plemel clarified that the setbacks were the same as other residential offices in the Historic District, noting that this was a “very unusual property”.

**(5:36:10) – Motion: I move to approve VAR-18-065, a Variance request to allow setbacks of seven feet, five feet, and 10 feet respectively where the required setbacks are 10 feet, 10 feet and 20 feet respectively, on property zoned Residential Office (RO) located at 213 South Nevada Street, APN 003-114-08, based on the findings and subject to the recommended conditions of approval in the Staff Report.**

<b>RESULT:</b>	<b>APPROVED (7-0-0)</b>
<b>MOVER:</b>	Borders
<b>SECONDER:</b>	Preston
<b>AYES:</b>	Sattler, Borders, Esswein, Monroy, Preston, Stowell, Tingle
<b>NAYS:</b>	None
<b>ABSTENTIONS:</b>	None
<b>ABSENT:</b>	None



**G.3 SUP-18-068 FOR POSSIBLE ACTION: TO CONSIDER A REQUEST TO AMEND SPECIAL USE PERMIT SUP-14-081 TO EXPAND THE MEDICAL MARIJUANA DISPENSARY AND RETAIL MARIJUANA USE BY 1,294 SQUARE FEET ON PROPERTY ZONED GENERAL COMMERCIAL (GC) LOCATED AT 2765 HIGHWAY 50 EAST, APN 008-312-12.**

(5:37:13) – Chairperson Sattler introduced the item. Ms. Sullivan presented the agenda materials which are incorporated into the record and responded to clarifying questions. She also recommended approval, noting that applicant representative Will Adler was present to answer questions.

(5:42:16) – Mr. Adler introduced himself as representing WSCC, Inc. and stated that he had read and would accept the conditions of approval in the Staff Report as written. He also reviewed the call center and additional dispensary space operations. Mr. Adler clarified that the marijuana would still be stored in “the locked gated area in the back” with an employee-only scan card entrance. There were no public comments.

**(5:45:04) – Motion: I move to approve SUP-18-068, a request to revise Special Use Permit SUP-14-081, to allow an expansion of a Medical Marijuana Dispensary and Retail Marijuana use by 1,294 square feet on property zoned General Commercial (GC) located at 2765 Highway 50 East, APN 008-312-12, based on the findings and subject to the conditions of approval contained in the Staff Report.**

<b>RESULT:</b>	<b>APPROVED (7-0-0)</b>
<b>MOVER:</b>	Tingle
<b>SECONDER:</b>	Stowell
<b>AYES:</b>	Sattler, Borders, Esswein, Monroy, Preston, Stowell, Tingle
<b>NAYS:</b>	None
<b>ABSTENTIONS:</b>	None
<b>ABSENT:</b>	None

**Items G.4 and G.5**

(5:46:13) – Upon Ms. Sullivan’s request, Chairperson Sattler introduced agenda items G.4 and G.5 together and noted that they will be discussed concurrently; however, each item will be acted upon separately.

(5:48:05) – Ms. Sullivan presented the Staff Report which is incorporated into the record and responded to clarifying questions. She also clarified that both items will require a recommendation to the Board of Supervisors for final action and noted that Railroad Drive has been identified as Railroad Street in the Master Plan; thus she will occasionally refer to it as such. Ms. Sullivan acknowledged the presence of Michelle Rambo of Rubicon Design Group, LLC and noted that she was available to answer questions.

(6:02:52) – Vice Chair Borders inquired about the emergency access and Ms. Sullivan explained that the applicant must show the location of the emergency access at the same time as the tentative map is provided. Commissioner Stowell was informed that the draft ordinance provided in the agenda materials will be adopted by the Board of Supervisors. She also requested information regarding the Linear Park Trail and Ms. Sullivan explained that the Specific Plan included policies regarding “creating the pedestrian linkage to Linear Park as well as to a future trail along the freeway to ensure safe pedestrian access to the school”, per the suggested motion. She also acknowledged that the applicant had not provided a projected student attendance as this was a Specific Plan Amendment and not a Development Project. Commissioner Tingle expressed concern about “the detrimental

traffic issue” on Railroad Drive and suggested having a “traffic control device”, adding that she had discussed the issue with the Public Works Department. Ms. Sullivan explained that this application had been delayed because of Staff’s concern about the traffic issue as well.

(6:10:30) – Chairperson Sattler invited the applicant representative to the podium. Michelle Rambo of Rubicon Design Group, LLC noted that they were in agreement with the conditions of approval outlined in the Staff Report. She also referenced a presentation which is incorporated into the record and clarified that the current discussion was a “broad framework” preceding any future developments adding that they are looking into the traffic and noise issues. Vice Chair Borders suggested starting to think about solar energy. Chairperson Sattler entertained public comments.

## **PUBLIC COMMENT**

(6:13:31) – Rick Riendeau introduced himself as a Railroad Drive resident and was concerned that the notice he had received had indicated a 3:30 p.m. start to the meeting and was unaware that this particular item would be discussed after 5 p.m. He also requested that Railroad Drive be “eliminated completely from all plans as a primary or as a secondary road of access”, citing a hazard to children walking to and from school.

(6:17:28) – Jim Flegal introduced himself as a resident of Caboose Drive suggested leaving the land zoning as agricultural, adding that he disagreed with the project.

(6:20:00) – Lee Harder introduced himself as living “right next to that beautiful pasture” and believed that the land was not suitable for anything besides a pasture due to its close proximity to the freeway and the noise it generates. He also played back a telephone recording of the freeway noise.

(6:24:39) – Carole Lee Challender introduced herself as a resident of Caboose Way and Railroad Drive and expressed concern over traffic, as they are a half a block away from Fremont Elementary School. She believed that too many cars travel on Railroad Drive as it is and cited examples of parents driving their children to and from school and kids riding bikes there. She proposed having access to the subdivision from Fairview Drive.

(6:27:25) – Tom Seyler introduced himself as an area resident as well and proposed not changing the zoning.

(6:27:50) – Janet Rhodes also introduced herself as an area resident, who was in favor of keeping the community “as is”, citing traffic and safety concerns. She was also concerned about the student capacity at the local schools.

(6:29:04) – Heather, no last name given, suggested not changing the current zoning.

(6:29:30) – Chairperson Sattler was informed by Ms. Sullivan that “the way the policy reads right now [after the fourth house is built] there needs to be secondary access; however, as long as the level of service at the intersection of Railroad and Saliman is D or better, that secondary access can be emergency only”. City Engineer Dan Stuckey added that they “need to ensure that the level of service is adequate for that development”. Discussion ensued regarding secondary access roads and Ms. Sullivan noted that until the applicant negotiates with adjacent landowners “it’s just a guess” for now. Commissioner Stowell stressed the importance of having school zoning and capacity projections. Commissioner Esswein believed “we should not be moving forward with any more [Lompa Ranch developments] until we get those [Highway 50 and Fifth Street] access points are all possible”. Ms. Sullivan clarified that the Board of Supervisors had placed an 811-unit cap on the North Lompa Ranch development, until access to Highway 50 was created, to preserve the level of service. Discussion ensued

regarding emergency access roads and the levels of service. Mr. Stuckey clarified for Commissioner Monroy that Level of Service D is “at the intersection, they’re going to evaluate Railroad and Saliman – and it’s basically evaluating waiting times at the intersection”. There were no additional comments; therefore, Chairperson Sattler entertained a motion.

**G.4 MPA-17-185 FOR POSSIBLE ACTION: TO ADOPT A RESOLUTION RECOMMENDING TO THE BOARD OF SUPERVISORS APPROVAL OF A MASTER PLAN AMENDMENT FROM BLACKSTONE DEVELOPMENT GROUP, INC. TO CREATE A NEW SPECIFIC PLAN AREA FOR 26.89 ACRES OF THE EXISTING LOMPA RANCH SPECIFIC PLAN AREA, LOCATED AT THE EAST END OF RAILROAD STREET BETWEEN SALIMAN ROAD AND RAILROAD STREET, APN 010-051-44.**

(6:51:13) – MOTION: I move to adopt Resolution No. 2018-PC-R-3 recommending to the Board of Supervisors approval of MPA-17-185, a Master Plan Amendment to create a new Specific Plan Area for 26.89 acres of the existing Lompa Ranch Specific Plan Area, located at the east end of Railroad Drive, APN 010-051-44 based on the findings contained in the Staff Report and subject to the incorporation of modified language to policies 3.1.2.b and 3.1.2.c as stated [below]:

**[3.1.2.b The Unified Pathways Master Plan (UPMP) identifies two nonmotorized path systems adjacent to the subject property. Future development plans will provide for path connectivity from the proposed development to the City’s Linear Park multi-use path along the west side of the Carson City Freeway. These two neighborhood access corridors shall be approximately 30 feet wide and have ten foot wide multi-use paths located in them. A public access easement or a similar legal instrument will be utilized to grant public access in perpetuity for these two neighborhood access corridors. The applicant will prepare the legal documents and record with final map.**

**3.1.2.c Chapter 7 in the UPMP provides the City’s sidewalk policies and implementation strategies for pedestrian connectivity within developments and between project sites and the City’s existing sidewalk / path systems. The design of the sidewalk system, including pedestrian crosswalks, connections to the adjacent residential neighborhood, and connections to the City’s nonmotorized path system will be reviewed for consistency with the UPMP at the time development is proposed.]**

<b>RESULT:</b>	<b>APPROVED (5-2-0)</b>
<b>MOVER:</b>	Borders
<b>SECONDER:</b>	Preston
<b>AYES:</b>	Sattler, Borders, Monroy, Preston, Stowell
<b>NAYS:</b>	Esswein, Tingle
<b>ABSTENTIONS:</b>	None
<b>ABSENT:</b>	None

**G.5 ZMA-17-186 FOR POSSIBLE ACTION: TO RECOMMEND TO THE BOARD OF SUPERVISORS APPROVAL OF A ZONING MAP AMENDMENT FROM BLACKSTONE DEVELOPMENT GROUP, INC. TO CHANGE THE ZONING FROM AGRICULTURE (A) TO SINGLE FAMILY 6000 (SF6) ON 26.89 ACRES OF THE EXISTING LOMPA RANCH SPECIFIC PLAN AREA, LOCATED AT THE EAST END OF RAILROAD STREET BETWEEN SALIMAN ROAD AND RAILROAD STREET, APN 010-051-44.**

(6:52:18) – MOTION: I move to recommend to the Board of Supervisors approval of ZMA-17-186, a Zoning Map Amendment to change the zoning designation from Agricultural to Single Family 6,000 on a 26.89 acre property located at the east end of Railroad Drive, APN 010-051-44, based on the findings contained in the Staff Report.

<b>RESULT:</b>	<b>APPROVED (6-1-0)</b>
<b>MOVER:</b>	Borders
<b>SECONDER:</b>	Preston
<b>AYES:</b>	Sattler, Borders, Esswein, Monroy, Preston, Stowell
<b>NAYS:</b>	Tingle
<b>ABSTENTIONS:</b>	None
<b>ABSENT:</b>	None

**G.6 ZCA-18-074 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.**

(6:53:37) – Chairperson Sattler introduced the item. Ms. Sullivan noted that she would present the framework and City Engineer Dan Stuckey will present the technical aspects of the request. She also stated that only the Board of Supervisors may amend a zoning code. Mr. Stuckey indicated that he would present several slides, gave background, and highlighted that the purpose of the request was “to increase the factor of safety” of the City’s Sewer System. He also responded to clarifying questions by the commissioners. There were no public comments.

(7:06:17) – 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.

<b>RESULT:</b>	<b>APPROVED (7-0-0)</b>
<b>MOVER:</b>	Esswein
<b>SECONDER:</b>	Borders
<b>AYES:</b>	Sattler, Borders, Esswein, Monroy, Preston, Stowell, Tingle
<b>NAYS:</b>	None
<b>ABSTENTIONS:</b>	None
<b>ABSENT:</b>	None

**I. STAFF REPORTS (NON-ACTION ITEMS)**

**I-1 DIRECTOR'S REPORT TO THE COMMISSION.**

(7:07:03) – Mr. Plemel stated that the marijuana sign ordinance approved by the Planning Commission would go to its second reading at the Board of Supervisors meeting in June. He also stated that the Commission’s June

meeting will include a temporary signage ordinance discussion; Special Use Permits for the Children’s Museum, the Fremont Elementary School expansion, and the Mark Twain Elementary School expansion; a Zoning Map Amendment related to Lompa Ranch North; and a Zoning Code Amendment for accessory dwelling units.

**FUTURE AGENDA ITEMS**

**COMMISSIONER REPORTS/COMMENTS**

(7:09:58) – Chairperson Sattler welcomed Commissioner Teri Preston to the Commission.

**J. PUBLIC COMMENT**

(7:10:20) – There were no public comments.

**K. FOR POSSIBLE ACTION: FOR ADJOURNMENT**

**(7:10:29) – Commissioner Tingle moved to adjourn. Chairperson Sattler adjourned the meeting at 7:10 p.m.**

The Minutes of the May 30, 2018 Carson City Planning Commission meeting are so approved this 27<sup>th</sup> day of June, 2018.

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MARK SATTLER, Chair

## 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:**

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**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:

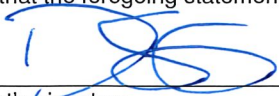
1. The proposed amendment supports the goals and policies of the Master Plan as the changes to the sewer capacity limits will help balance future growth with sewer capacity as outlined as a principle for achieving a Balanced Land Use Pattern. The proposed changes will align with industry design standards 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

5/11/18

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:

Summary: an ordinance establishing various provisions relating to sewer pipe design criteria.

BILL NO. \_\_\_\_

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

AN ORDINANCE RELATING TO SEWER PIPE DESIGN CRITERIA; AMENDING TITLE 18 APPENDIX (CARSON CITY DEVELOPMENT STANDARDS), DIVISION 15 (WATER, SEWER, RECLAIMED WATER STANDARDS) OF THE CARSON CITY MUNICIPAL CODE TO ESTABLISH CERTAIN SIZING AND PEAK FLOW REQUIREMENTS RELATING TO SEWER PIPES; MAKING CONFORMING CHANGES IN TITLE 12 (WATER, SEWERAGE AND DRAINAGE), CHAPTER 12.06 (INDUSTRIAL WASTEWATER DISCHARGES – SEWER DESIGN STANDARDS); AND PROVIDING OTHER MATTERS PROPERLY RELATED THERETO.

The Board of Supervisors of Carson City do ordain:

SECTION I:

That Title 18 Appendix (Carson City Development Standards), Division 15 (Water, Sewer, Reclaimed Water Standards), Section 15.3 (Design Requirements), is hereby amended (**bold, underlined** text is added, ~~stricken~~ text is deleted) as follows:

**15.3 - Design requirements.**

15.3.1 Water and Reclaimed Water Design Criteria.

- a. Main Analysis. Water mains shall be analyzed to determine system capability to provide adequate flows and pressures. The analysis and calculations shall be provided to Carson City development engineering for review and approval, or the applicant may request that the analysis be done by the city. The cost to the city for performing the analysis shall be charged to the developer. Water mains shall be designed to deliver a minimum of sixty (60) psi at the meter during peak demand periods and to provide adequate fire flow as required by the fire department. If project is an infill development where the existing system is incapable of providing sixty (60) psi, the utilities director may waive the requirement.

Subdivisions, PUD's and large commercial or industrial projects having a significant impact on the city water system as determined by the Carson City development engineering department shall provide an update of the city water model using a format

that is compatible with the current model, or request the city perform the analysis as described above.

New construction or remodels adjacent to the existing Carson City water system where little or no additional system improvements are required; must provide a report with current date, project address (with location map), APN number, permit number, if available, comparing the required fire flow established by the building and safety department (UFC) and the "available" flow obtained by the actual fire flow data sheet, which shall be approved.

The report shall address system pressures at the project location to assure sixty (60) psi is available at all water meters during peak day demands.

Reclaimed water mains shall be analyzed to provide adequate flow and pressure at the points of service for new intended use. The analysis must consider future uses as determined by the utilities department.

- b. Main Size and Material. Mains shall be sized as required by flow calculations, however, the minimum water main diameter shall be six inches (6").

Water mains shall be PVC C-900 CL 150 unless otherwise required and approved by the utilities department. Reclaimed water mains shall be PVC C-900 CL 150, purple in color, unless otherwise required and approved by the utilities department.

- c. Standard Details. The installation of all new water and reclaimed water lines shall conform to the "Standard Details for Public Works Construction" as adopted by Carson City.
- d. Meters. Each building shall be served by a separate water service and meter unless otherwise approved by the utilities department. All meters shall be located within the street right-of-way or in a public utilities easement (P.U.E.) parallel and adjacent to the street right-of-way unless otherwise approved by the city engineer. Meters shall not be located within the driving surface.

Meter sizes available include 5/8 " x 3/4", 1", 1 1/2", 2", 3", 4", 6", and 8".

- e. Services. Services shall be located as per the standard detail titled "typical utility laterals locations," unless otherwise approved by the utilities department. Reclaimed water meter boxes shall be painted purple. All services, except those located in cul-de-sacs, shall be installed perpendicular to the main.

Service lines may be 3/4", 1", 1 1/2", 2", 3", 4", 6", and 8". A 3" service requires a 4" gate valve with a 4" line.

See standard details titled "Water Service Tap," "1/4" Double and Single Pit Setter", "1" Single Pit Setter," "1 1/2" to 2" Meter Set," "3" to 8" Meter Set," "Service Saddle Detail, (3/4" to 2"), and "1" Dual Meter Set."



- f. Valves. Water valves on distribution mains shall be spaced at intervals not to exceed five hundred feet (500'). Reclaimed water valves shall be spaced at intervals not to exceed one thousand three hundred twenty feet (1,320'). No point within the system being designed shall require more than three (3) valve closures to discontinue service. Valves shall be located so that no more than fifteen (15) customers are taken out of service at any one time. Valves shall be placed a minimum of twenty feet (20') from the end of all mains which may be extended in the future unless there is no possibility of future connections as determined by the utilities department. See standard details titled "valve detail" and "valve box detail".

Water valves at intersections shall be located at the curb returns. Reclaimed water valves shall not be located at intersections without approval by the city engineer.

All existing valves necessary to isolate the section of main to be extended shall be shown.

- g. Flush Valve Assemblies. A four-inch (4") flush valve assembly or fire hydrant is required at the end of all pressurized dead end water mains and stubs greater than ten feet (10') as per standard detail titled "flush valve assembly."
- h. Fire Hydrants Fire hydrants within a subdivision shall be spaced as approved by the fire department. Fire hydrants and their associated valve shall be shown on the plans and constructed as per standard detail titled "fire hydrant assembly detail."
- i. Check-Valves. Check-valves shall be installed on all private fire hydrant lines per standard detail titled "check-valve detail." Pressure loss associated with all check-valves shall be included in fire flow calculations.

Check-valves shall be installed on the customer's side of the right-of-way line. When a P.U.E. is parallel to the right-of-way line, the check-valve shall be installed on the customer's side of the P.U.E.

- j. Double Check-Valve Assemblies. Double check-valve assemblies shall be installed on all private fire sprinkler lines as per standard detail titled "Detail for Double Check Valve Assemblies." Fire systems utilizing chemicals require a reduced pressure backflow assembly. Pressure loss associated with all check-valves shall be included in fire flow calculations. The assemblies shall be tested prior to certificate of occupancy and annually by a certified backflow prevention assembly tester as approved by the utilities department.

Double check-valve assemblies shall be installed on the customer's side of the right-of-way line. When a P.U.E. is parallel to the right-of-way line, the double check-valve assembly shall be installed on the customer's side of the P.U.E.

- k. Tapping Sleeves. Tapping sleeves are required when connecting a new main to an existing main when water service cannot be discontinued. See standard detail titled "tapping sleeve detail."

The water utility division shall tap all existing water mains when the tap size is greater than 2" (4", 6", 10", or 12"). The plans shall indicate when a tap is to be performed by the water utility division. Plans shall include a note indicating that the contractor shall notify Carson City water utility, in writing, forty-eight (48) hours prior to performing hot taps, either by fax or mail. (Fax number 775-887-2164)

- l. Air-Release and Vacuum Valves. Air-release valves are required at all high points in water mains unless adequate relief is provided and approved by the utilities department. See standard detail titled "air-release valve detail." Air-release/vacuum valves are required at all high points in reclaimed water mains and shall be spaced at two thousand six hundred feet (2600') maximum intervals, regardless of whether high points exist in the main. Provide calculations for sizing air-release/vacuum valves for review and approval by Carson City development engineering.
- m. Separations. Minimum horizontal separation between water lines and sewer, storm drain and reclaimed water lines shall be ten feet (10'). Minimum horizontal separation from all other utilities shall be five feet (5'). Minimum vertical separation shall be eighteen inches (18") unless otherwise approved by the utilities department. See standard detail titled "sanitary sewer and storm drain crossings."
- n. Lowering Water Mains. 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, such as designing with vertical curves, shall require approval of the Carson City development engineering. Provide calculations for review and approval by the Carson City development engineering.
- o. Air-Gap Separation. Private receiving tanks require an air-gap and shall be installed as per standard detail titled "installation for air-gap separation." A backflow prevention assembly permit from the utilities department is required prior to installation.
- p. Reduced Pressure Assemblies. Reduced pressure assemblies shall be per standard detail titled "detail for reduced pressure principle assemblies" and are required per Table I, Type of Backflow Protection Required. A backflow prevention assembly permit from the utilities department is required prior to installation. These assemblies shall be tested annually by a certified backflow prevention assembly tester as approved by the utilities department.
- q. Thrust Blocks. Thrust blocks are required on all new water and reclaimed water main installations, public and private fire hydrants, and sprinkler line installations and shall be constructed as shown in the standard detail titled "Thrust Block Bearing Areas."

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. **Except as otherwise provided in this paragraph, a sewage collection system for any project must be sized to carry the design peak hourly flow from the entire tributary area at buildout regardless of whether the tributary area is not located within the boundaries of the project, 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 [eonsidered] **deemed to be** at capacity when **the design** peak flow is at [~~d/D = 0.75.~~] **depth/diameter (d/D) = 0.50, for a pipe that is 15 inches or less in diameter, and depth/diameter (d/D) = 0.75, for a pipe that is greater than 15 inches in diameter.** Main analysis shall include a narrative report submitted to the utilities department with maps and calculations addressing the following:

Area of project

Tributary areas outside project

Adjacent areas

Contours usually extending a minimum of three hundred feet (300') beyond the project or as needed to evaluate localized tributary areas

Line layout, pipe size and slope

Predicted average and peak flows at major junction points including flow coming from outside the project area

Direction of flow

Zoning used to predict flows

Special areas such as hospitals, schools, large office or industrial buildings, etc.

Boundaries of areas within the project which are tributary to points of major flow

Floodplains

Scale

Predicted flow from each area

Peaking factors

Cumulative flow

Pipe capacities and depths of flow

- b. Sewer Size and Laterals. 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.

Size	Minimum Slope
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 fourth-tenths of a percent (0.4%), the design engineer shall place the following note in a prominent location on each plan/profile sheet with slopes less than fourth-tenths of a percent (0.4%); "The contractor shall use due care in installing sewer mains." Minimum pipe slope for dead end sewers shall be five-tenths of a percent (0.5%) 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 Standards 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.

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 inches (60") in 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-tenths 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") in 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 2 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 12 inches lower than the water main or water service lateral, as measured vertically from the exterior walls of the pipes; and
  - (b) At least 48 inches 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 18 inches 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 6 inches 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 4 inches of cement slurry for a distance of at least 10 feet 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 10 feet 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 18 inches 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 12 inches 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 5 feet of backfill; and
  - (b) Enclosed in a pipe sleeve or encased with at least 4 inches of cement slurry.
4. If the pipeline will cross under the surface of a channel of water that is 15 feet 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 4 inches 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 12 inches 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 2 barrels, with a minimum pipe size of 8 inches, 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 3 feet per second for average flow. The inlet and outlet details shall be arranged so that normal flow is diverted to 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.

#### 15.3.3 Sewer Lift/Pump Stations.

- a. General Requirements. These standards apply only to those facilities to be owned and operated by the Carson City utilities department. The use of sewage lift stations or pump stations is allowed only where gravity flows are infeasible. The city engineer or designee shall determine if a lift/pump station is to be owned and operated by the city. The design of stations to be owned and operated by the city is subject to approval by the city engineer or designee.

Special design consideration shall be given to match existing systems and equipment as determined by the utilities director or designee. Lift stations shall not have any areas requiring routine or preventative maintenance, or normal operations, designated as a confined space.

All stations shall generally conform to the following:

- b. Flows. The pumping system including the discharge piping and mains shall be designed for a minimum of 110% of the capacity of the tributary system leading to the station. The capacity shall be based on peak hour volumes.
- c. Pumps. No fewer than 2 pumps shall be provided. When only 2 pumps are used, each pump shall pump the capacity of the system.

For stations with more than 2 pumps, there shall be a standby pump with the capacity of the largest unit.

Pumps shall be designed to operate automatically in alternate cycles with the idle pump in each cycle to function as standby. Pumps shall be specifically designed for the conveyance of wastewater.

Pumps in a drywell/wetwell application shall be equipped with motors that are premium efficiency with TEFC enclosures; double mechanical seals with external flushing water; seal water systems shall meet utilities department requirements (a standby seal water pump shall be provided).

- d. Flow Metering. The pump station shall have 1 magnetic flow meter with 4-20 MA output installed on the pressure main in a suitable water-tight vault.
- e. Piping. Drywell/wetwell piping applications shall be ductile iron with grooved or flanged joints.

Any fasteners used for joining pipes shall be stainless steel. Pump isolation valves shall be eccentric or full port plug valves. Swing check valves shall be provided on each pump discharge. The individual pump discharge shall connect into the main header horizontally to prevent grit buildup in the check valve. Sewage air relief valves are required at high points in the discharge line.

- f. Wetwell. Openings to wetwells shall be sealed to prevent the escape of gasses. All surfaces of wetwells shall be coated with a coal tar epoxy coating to prevent concrete corrosion. Steel used in wetwells shall be stainless. Wetwell sizing shall be in accordance with the Hydraulic Institute Standards, latest issue. The wetwell shall be sized for no greater than 4 pump starts per hour to prevent motor overheating. Openings between the wetwell and drywell shall be sealed gas-tight.
- g. Drywell. Drywell access shall be by straight stairs unless otherwise approved by the utilities director or designee. The drywell shall contain 2 sump pumps with 1 pump on the floor out of the sump. Each sump pump shall be capable of pumping 50 gallons per minute. The drywell layout shall allow for wastewater pump removal through a hatch at the ground level over each pump. The layout shall allow for personnel access to all sides of the installed equipment. The drywell shall contain an auxiliary space heater, station dehumidifying unit, and venting fan. Individual equipment lockouts are required for all motorized equipment.

- h. Ventilation. Ventilation shall be in accordance with the latest edition on NFPA 820, Fire Protection in Wastewater Treatment and Collection Facilities or latest code as adopted by Carson City.
- i. Flood Protection. Access to all spaces, all electrical panels, and motors shall be at an elevation above or protected from a 100 year flood.
- j. Standby Power. A standby generator shall be provided capable of automatically running the entire station's load if power fails due to a sensed high or low voltage on any of 3 legs of 480 volt power. The generator shall be located in a weather-protective, sound-proofed, vandal-proof and lockable housing with access to all engine and generator components for servicing and maintenance. The generator shall be fueled by natural gas or propane with an above-ground, vandal-proof storage tank with a capacity to provide a 48 hour continuous run time. The generator engine block shall be equipped with a block heater and thermostat that shall allow for instantaneous start-up at -30 degrees F. The engine shall be protected with shutdown safeguards, gauges and indicator lamps for over-temperature, low oil pressure, overspeed and overcrank. The engine shall be equipped with an automatic battery charger, installed on the hot side of the transfer switch enabling the battery to maintain its charge when idle.
- k. Applicable Design Codes. The following list of codes and standards are to be followed as a minimum:
  - Building Code (Latest Edition as adopted by Carson City);
  - Plumbing Code (Latest Edition as adopted by Carson City);
  - Mechanical Code (Latest Edition as adopted by Carson City);
  - Fire Code (Latest Edition as adopted by Carson City);
  - National Electrical Code (Latest Edition);
  - NFPA Article 820 (Latest Edition);
  - National Fire Code (Latest Edition);
  - Occupational Safety and Health Standards (Latest Edition);
  - Hydraulic Institute Standards (Latest Edition);
  - Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers Standards for Wastewater Facilities (Latest Edition).
- l. Controls. All controls and telemetry shall be above surface grade in suitable lockable and vandal-proof housings. Wastewater pump activation shall be by float or bubbler level control.
- m. Alarms. Alarm system shall be of a radio telemetry type and shall include a sending unit at the lift station and a receiving unit at a city-designated facility. The telemetry system shall be compatible and of like type with those units presently in use at the wastewater reclamation facility or as determined by the

city engineer or designee. As a minimum, the following alarms shall be provided:

- (1) High wetwell;
  - (2) Flooded drywell;
  - (3) Loss of power;
  - (4) Wetwell combustible gases;
  - (5) Loss of seal water;
  - (6) Wastewater pump failure (by check valve limit switch in addition to motor overload);
  - (7) Low level.
- n. Electrical Components. In addition to the requirements of NFPA 820 and the National Electric Code, electrical enclosures shall be NEMA 4X, stainless steel out of doors and NEMA 4X fiberglass in drywells and wetwells as a minimum. Conduits and boxes located in wetwells shall be PVC coated.
- o. Land. Suitable land area for the lift station installation and operation including access shall be provided by dedication to the city.

## SECTION II:

That Title 12 (Water, Sewerage and Drainage), Chapter 12.06 (Industrial Wastewater Discharges- Sewer Design Standards), Section 12.06.380 (Sanitary sewer design standards and specifications—Sewer extension) is hereby amended (**bold, underlined** text is added, ~~stricken~~ text is deleted) as follows:

- 12.06.380 Sanitary sewer design standards and specifications—Sewer extension **and connection.**
- A. In general, sewer connections and extensions shall be allowed only if the existing downstream system has capacity and if the sewage treatment facilities have capacity to accept the additional loading.
  - B. It shall be a requirement of the proposed project to determine the capacity of the downstream system. In the event there are restrictions or low capacities in portions of the existing system, it shall be the requirement of the proposed project to include the improvement of the restricted areas to accept the anticipated additional sewage flow.
  - C. Sewer mains are ~~considered~~ **deemed to be** at capacity when **the design** peak flow is at ~~[ $d/D = \text{seventy five hundredths (0.75)}$ ].]~~ **depth/diameter (d/D) = 0.50, for a pipe that is 15 inches or less in diameter, and depth/diameter (d/D) = 0.75, for a pipe that is greater than 15 inches in diameter.**

D. All sewer main extensions shall be televised by the department. The applicant will be charged on a per foot basis for the actual cost of the televising as determined by the department.

SECTION III:

That no other provisions of Title 18 or Title 12 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.