SYRACUSE CITY

Syracuse City Council
Work Session Notice
July 14, 2015 – 6:00 p.m.
Municipal Building, 1979 W. 1900 S.

Notice is hereby given that the Syracuse City Council will meet in a work session on Tuesday, July 14, 2015, at 6:00 p.m. in the large conference room of the Municipal Building, 1979 W. 1900 S., Syracuse City, Davis County, Utah. The purpose of the work session is to discuss/review the following items:

a. Review agenda for Council business meeting to begin at 7:00 p.m. (2 min.)

b. Review items forwarded by Planning Commission: (10 min.)
   i. Final Subdivision Plan Approval, Still Water Lake Estates Phase 7, located at approximately 3669 S. Bayview Drive.
   ii. Proposed Ordinance 15-14 amending Title Eight of the Syracuse City Code pertaining to construction specifications.

c. Review agenda item 8, Proposed Ordinance amending Title Three of the Syracuse City Code pertaining to the Museum and Cultural Center Board. (10 min.)

d. Review agenda item 9, Authorize Administration to award and execute contract for Smedley Acres Culinary Waterline Project Phase 2. (10 min.)

e. Council business. (2 min.)

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In compliance with the Americans Disabilities Act, persons needing auxiliary communicative aids and services for this meeting should contact the City Offices at 801-825-1477 at least 48 hours in advance of the meeting.

CERTIFICATE OF POSTING

The undersigned, duly appointed City Recorder, does hereby certify that the above notice and agenda was posted within the Syracuse City limits on this 9th day of July, 2015 at Syracuse City Hall on the City Hall Notice Board and at http://www.syracuseut.com/. A copy was also provided to the Standard-Examine on July 9, 2015.

CASSIE Z. BROWN, CMC
SYRACUSE CITY RECORDER
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CITY COUNCIL AGENDA

July 14, 2015

Agenda Item **b.i**

Final Subdivision Plan
Still Water Lake Estates Phase 7
3669 S Bayview Drive

Factual Summation

Zone:	R-1 Cluster Residential
Applicant:	Irben Development
Total Acreage:	5.5
Requested Lots:	28 lots

Public Meeting Outline

The City has been working with the developer on this project for approximately three and one-half years. The project outline is as follows:

Sales Contract of City Property
City Council January 31, 2012

Annexation of Irben Property
City Council May 8, 2012

General Plan/Rezone Approval
City Council June 26, 2012

Sketch Plan Reviews-(30 ski lots, 288 Town Homes)
Planning Commission July 17, 2012-**Tabled**
August 7, 2012-**Tabled** (dead end street length, county canal crossing)

Annexation of Weaver Property
City Council March 12, 2013

Sketch Plan Amendment-(30 ski lots, 202 cottage lots, 168 Town Homes=400 units)
Planning Commission June 4, 2013- **Tabled** to modify lots to minimum 5,000 sq. ft., 55 feet frontage, side setbacks of 8 feet, reduce number of entrances on Gentile, and replace flag lot with cul-de-sac.
August 6, 2013- **Approved Sketch**, conditioned upon removing Phase 8 if purchased by UDOT.

Sketch Plan Amendment-(30 ski lots, 134 cottage lots, 54 courtyard lots, 56 town homes)

Planning Commission October 16, 2013-**Denied** for deviating from previous approval which required 5,000 sq. ft., 55 feet of frontage, and 8 ft side setbacks.

Preliminary Plan-(30 ski lots, 165 cottage lots)

Planning Commission February 18, 2014- **Tabled** to review previous approvals/requirements

March 4, 2014-**Approved**

Conditional Use Approval

Planning Commission May 6, 2014-**Approved**

City Council May 14th-**Approved**

Final Plan

Planning Commission July 7, 2015

Background

This application is for final plan approval of the Still Water Lake Estates subdivision phase 7 located on 3669 S Bayview Drive. This proposal consists of 28 single family homes. The overall development is 86.55 acres with a net density of 2.78 DU/AC. Please see staff reports for outstanding items.

Attachments

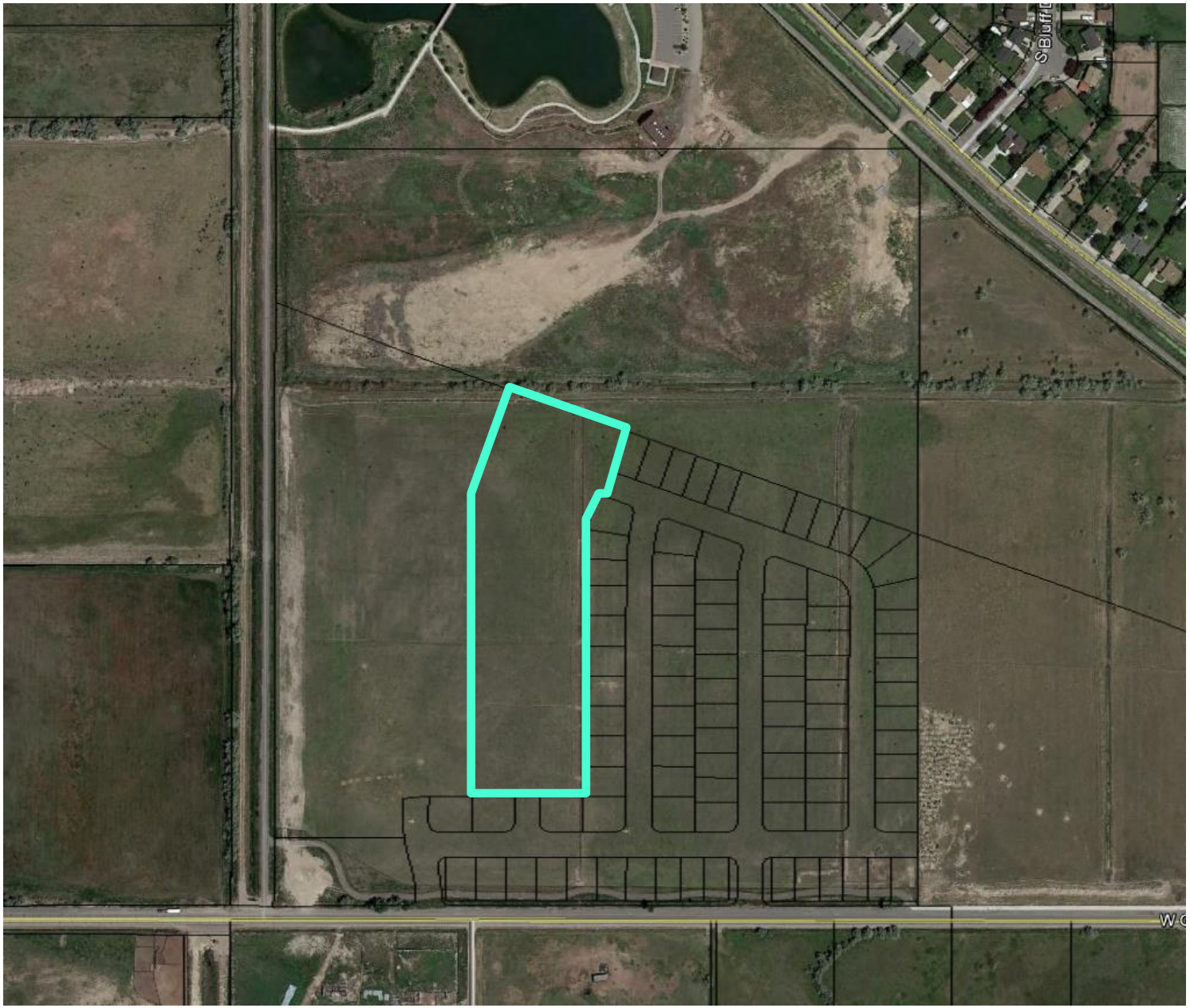
- Aerial
- Final Plan
- Staff Reviews

Suggested Motions

Planning Commission Recomendation

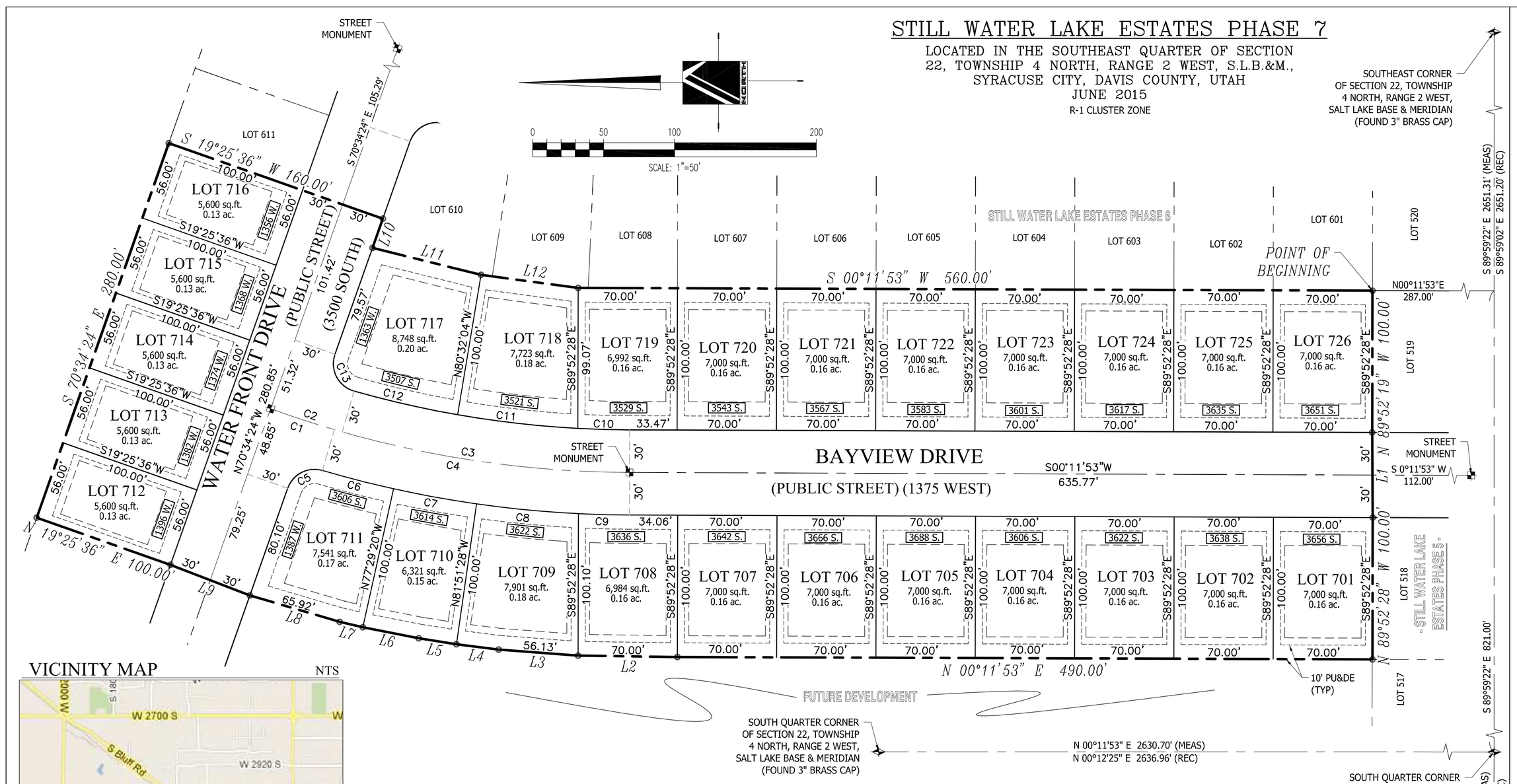
The Planning Commissioned moved to recommend approval to the City Council of the Still Water Lake Estates Phase 7 Final Plan, Irben Development, property located at approximately 3669 S Bayview Dr, subject to all applicable requirements of the City's municipal codes and City staff reviews.

Still Water Lake Estates
3669 S Bayview Dr



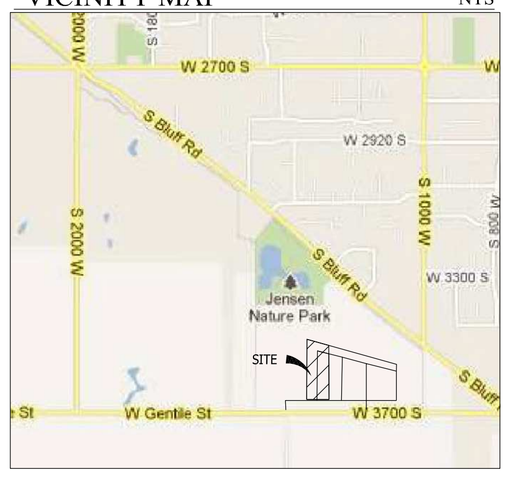
STILL WATER LAKE ESTATES PHASE 7

LOCATED IN THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 2 WEST, S.L.B.&M., SYRACUSE CITY, DAVIS COUNTY, UTAH
JUNE 2015
R-1 CLUSTER ZONE



VICINITY MAP

NTS



LEGEND

- PROPERTY LINE
- LOT LINE
- CENTER / SECTION LINE
- STREET RIGHT-OF-WAY LINE
- EASEMENT LINE
- ADJACENT PROPERTY LINE
- SECTION CORNER
- PU&DE — PUBLIC UTILITY & DRAINAGE EASEMENT
- SET 5/8" REBAR WITH A ORANGE PLASTIC CAP, OR NAIL & WASHER STAMPED PINNACLE ENG. & LAND SURV.
- N/R — NON-RADIAL
- NEW CENTERLINE MONUMENT
- CA — COMMON AREA - SEE CC&R'S

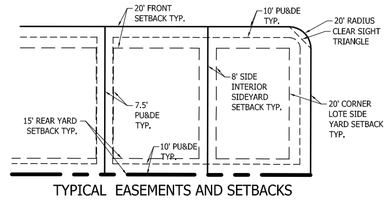
"Utilities shall have the right to install, maintain and operate their equipment above and below ground and all other related facilities within the Public Utility Easements identified on this plat map as may be necessary or desirable in providing utility services within and without the lots identified herein, including the right of access to such facilities and the right to require removal of any obstructions including structures, trees and vegetation that may be placed within the PUE. The utility may require the lot owner to remove all structures within the PUE at the lot owner's expense, or the utility may remove such structures at the lot owner's expense. At no time may any permanent structures be placed within the PUE or any other obstruction which interferes with the use of the PUE without the prior written approval of the utilities with facilities in the PUE."

LINE TABLE

LINE	LENGTH	BEARING
L1	60.00	S89°37'20"W
L2	70.00	N00°47'40"E
L3	56.13	N04°21'28"E
L4	30.06	N07°09'49"E
L5	26.90	N09°01'06"E
L6	40.19	N11°12'08"E
L7	16.76	N13°03'26"E
L8	65.92	N16°25'07"E
L9	60.02	N21°02'29"E
L10	21.85	N70°34'24"W
L11	78.81	S13°57'27"W
L12	69.10	S07°40'02"W

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	CHORD BRG	CHORD
C1	47.30	750.00	3°36'49"	S18°07'08"W	47.30
C2	53.13	750.00	4°03'33"	S17°53'47"W	53.12
C3	205.10	750.00	15°40'07"	S08°01'56"W	204.46
C4	210.93	750.00	16°06'51"	S08°15'18"W	210.24
C5	30.33	20.00	86°53'08"	N27°07'50"W	27.51
C6	51.75	780.00	3°48'04"	S14°24'42"W	51.74
C7	59.48	780.00	4°22'08"	S10°19'36"W	59.46
C8	72.20	780.00	5°18'13"	S05°29'26"W	72.18
C9	35.95	780.00	2°38'27"	S01°31'06"W	35.95
C10	36.55	720.00	2°54'31"	S01°39'08"W	36.55
C11	85.31	720.00	6°47'20"	S06°30'04"W	85.26
C12	75.03	720.00	5°58'16"	S12°52'52"W	75.00
C13	32.66	20.00	93°33'36"	S62°38'48"W	29.15



TYPICAL EASEMENTS AND SETBACKS

CENTURYLINK

APPROVED THIS _____ DAY OF _____, 20___, BY A REPRESENTATIVE OF QWEST COMMUNICATIONS.

QWEST COMMUNICATIONS REPRESENTATIVE

QUESTAR GAS COMPANY

APPROVED THIS _____ DAY OF _____, 20___, BY A REPRESENTATIVE OF QUESTAR GAS COMPANY.

QUESTAR GAS COMPANY REPRESENTATIVE

ROCKY MOUNTAIN POWER

APPROVED THIS _____ DAY OF _____, 20___, BY A REPRESENTATIVE OF ROCKY MOUNTAIN POWER.

ROCKY MOUNTAIN POWER REPRESENTATIVE

CITY ATTORNEY'S APPROVAL

APPROVED THIS _____ DAY OF _____, 20___, BY THE SYRACUSE CITY ATTORNEY.

SYRACUSE CITY ATTORNEY

PLANNING COMMISSION APPROVAL

APPROVED THIS _____ DAY OF _____, 20___, BY THE SYRACUSE CITY PLANNING COMMISSION.

SYRACUSE CITY PLANNING COMMISSION

CITY ENGINEER'S APPROVAL

APPROVED THIS _____ DAY OF _____, 20___, BY THE SYRACUSE CITY ENGINEER.

SYRACUSE CITY ENGINEER

CITY COUNCIL APPROVAL

APPROVED THIS _____ DAY OF _____, 20___, BY THE SYRACUSE CITY COUNCIL.

ATTEST:

SYRACUSE CITY RECORDER

SYRACUSE CITY MAYOR

SURVEYOR'S CERTIFICATE

I, STEPHEN J. FACKRELL DO HEREBY CERTIFY THAT I AM A LICENSED LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 191517 AS PRESCRIBED UNDER LAWS OF THE STATE OF UTAH. I FURTHER CERTIFY THAT BY AUTHORITY OF THE OWNERS, I HAVE MADE A SURVEY OF THE TRACT OF LAND SHOWN ON THIS PLAT AND DESCRIBED BELOW, AND HAVE SUBDIVIDED SAID TRACT OF LAND INTO LOTS, HEREAFTER TO BE KNOWN AS: STILL WATER LAKE ESTATES PHASE 7 AND THAT THE SAME HAS BEEN CORRECTLY SURVEYED AND STAKED ON THE GROUND AS SHOWN ON THIS PLAT. I FURTHER CERTIFY THAT ALL LOTS MEET FRONTAGE WIDTH AND AREA REQUIREMENTS OF THE APPLICABLE ZONING ORDINANCES.

BOUNDARY DESCRIPTION

PART OF THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 2 WEST, SALT LAKE BASE AND MERIDIAN, U.S. SURVEY, BEGINNING AT THE SOUTHEAST CORNER OF STILL WATER LAKE ESTATES PHASE 6, SAID POINT BEING LOCATED SOUTH 89°59'22" EAST 821.00 FEET ALONG SECTION LINE AND NORTH 00°11'53" EAST 287.00 FEET FROM THE SOUTH QUARTER CORNER OF SAID SECTION 22, AND RUNNING THENCE NORTH 89°52'19" WEST 100.00 FEET; THENCE SOUTH 89°37'20" WEST 60.00 FEET; THENCE NORTH 89°52'28" WEST 100.00 FEET; THENCE NORTH 00°11'53" EAST PARALLEL WITH QUARTER SECTION LINE 490.00 FEET; THENCE NORTH 00°47'40" EAST 70.00 FEET; THENCE NORTH 04°21'28" EAST 56.13 FEET; THENCE NORTH 07°09'49" EAST 30.06 FEET; THENCE NORTH 09°01'06" EAST 26.90 FEET; THENCE NORTH 11°12'08" EAST 40.19 FEET; THENCE NORTH 13°03'26" EAST 16.76 FEET; THENCE NORTH 16°25'07" EAST 65.92 FEET; THENCE NORTH 21°02'29" EAST 60.02 FEET; THENCE NORTH 19°25'36" EAST 100.00 FEET; THENCE SOUTH 70°34'24" EAST 280.00 FEET; THENCE SOUTH 19°25'36" WEST 160.00 FEET; THENCE NORTH 70°34'24" WEST 21.85 FEET; THENCE SOUTH 13°57'27" WEST 78.81 FEET; THENCE SOUTH 07°40'02" WEST 69.10 FEET; THENCE SOUTH 00°11'53" WEST 560.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 240,351 SQ. FT. (5.52 ACRES) - 26 LOTS

DATE

STEPHEN J. FACKRELL
LICENSE NO. 191517

OWNER'S DEDICATION

We the undersigned owner(s) of the herein described tract of land, do hereby set apart and subdivide the same into lots, parcels and public streets as shown hereon and name said tract,

STILL WATER LAKE ESTATES PHASE 7

and do hereby grant and dedicate a perpetual right and easement over, upon and under the lands designated hereof as public utility and drainage easements, the same to be used for the installation maintenance and operation of public utility service line, storm drainage facilities, irrigation canals or for the perpetual preservation of water channels in their natural state whichever is applicable as may be authorized by the governing authority, with no buildings or structures being erected within such easements. And also grant and dedicate unto all owners of lots upon which private utility easements as shown hereon, for the purpose of perpetual maintenance and operation.

In witness whereof _____ have hereunto set _____ this day of _____ A.D., 20____.

WOODSIDE HOMES OF UTAH LLC
RYAN ORTMAN, DIVISION PRESIDENT

ACKNOWLEDGMENT

STATE OF UTAH)
COUNTY OF DAVIS)

ON THE____DAY OF _____A.D., 20___, PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR SAID COUNTY OF DAVIS IN SAID STATE OF UTAH, THE SIGNER ( ) OF THE ABOVE OWNER'S DEDICATION, ____IN NUMBER, WHO DULY ACKNOWLEDGED TO ME THAT_____ SIGNED IT FREELY AND VOLUNTARILY AND FOR THE USES AND PURPOSES THEREIN MENTIONED.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC
RESIDING IN DAVIS COUNTY

STILL WATER LAKE ESTATES PH. 7

LOCATED IN THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 2 WEST, S.L.B.&M., SYRACUSE CITY, DAVIS COUNTY, UTAH

PINNACLE Engineering & Land Surveying, Inc.
2720 North 350 West, Suite #108
LAYTON, UT 84041
Phone: (801) 773-1910
Fax: (801) 773-1925

DAVIS COUNTY RECORDER

ENTRY NO._____FEE PAID_____FILED FOR RECORD AND RECORDED THIS _____ DAY OF _____, 20___AT _____ IN BOOK _____ OF OFFICIAL RECORDS PAGE _____

DAVIS COUNTY RECORDER

BY _____
DEPUTY RECORDER

12-003

SYRACUSE
EST. CITY 1935

Planner Final Subdivision Review

Subdivision: Still Water Lake Estates Phase 7 **Date**: June 29, 2015

Completed By: Jenny Schow, City Planner **Updated**: July 2, 2015

8-6-10 Final Plat

Please review and amend the following items:

1. Amend site triangle to 40' feet on the typical easement diagram
2. Update addressing to that submitted by the city.

Items required for Preconstruction:

1. Construction Drawing Prints and PDF files
2. Schedule a preconstruction meeting
3. Bond estimate using the City template
4. Final Inspection Fees as calculated in the approved bond estimate
5. Offsite Improvement Agreement
6. BMP Facilities Maintenance Agreement (Parcel A)
7. Streetlight Agreement
8. SWPPP NOI
9. SWPPP City Permit
10. Fugitive Dust Control Plan

Items required for Recording:

1. Escrow Agreement
2. Water Shares
3. Title Report - must be updated within 30 days or recording
4. Recording fees: $37/page +$1/lot and any common space as well as $1/land-owner signatures over two

Still Water Lake Estates Subdivision Phase 7

Bayview Drive & Water Front Drive

Engineer Final Plan Review

Completed by Brian Bloemen on July 2, 2015

Below are the engineering comments for the final plan review of the Still Water Lake Estates Subdivision Phase 7.

Plans:

1. Contact North Davis Sewer District for approval on connections to District mains.

If you have any further comments or questions please feel free to contact me at 801-614-9630.

Sincerely,

Brian Bloemen, P.E.
City Engineer

TO: Community Development, Attention: Jenny Schow
FROM: Jo Hamblin, Fire Marshal
RE: Still Water Estates Phase 7

DATE: June 25, 2015

I have reviewed the plan for the above referenced project. The Fire Prevention Division of this department has the following comments/concerns.

1. Fire hydrants and access roads shall be installed prior to construction of any buildings. All hydrants shall be placed with the 4 ½" connection facing the point of access for Fire Department Apparatus. Provide written assurance that this will be met.

2. Prior to beginning construction of any buildings, a fire flow test of the new hydrants shall be conducted to verify the actual fire flow for this project. The Fire Prevention Division of this department shall witness this test and shall be notified a minimum of 48 hours prior to the test.

These plans have been reviewed for Fire Department requirements only. Other departments must review these plans and will have their requirements. At this time the Fire Department has no concerns regarding fire protection or access. This review by the Fire Department must not be construed as final approval from Syracuse City.

Sincerely,

Jo Hamblin
Deputy Chief/ Fire Marshal
Syracuse City Fire Department

1869 South 3000 West, Syracuse, Utah 84075
801-614-9614 (Station)
801-776-1976 (Fax)

CITY COUNCIL AGENDA

July 14, 2015

Agenda Item #b.ii Code Amendment to Title VIII pertaining to Construction Specifications

Background

City code has not been updated since the City Council adopted the Engineering Standards and Specifications through resolution. This amendment is to rectify the conflicts that exist. Please see the attached proposal.

Attachments

- Proposed code amendment

Planning Commission Recommendation

The Planning Commission moved to recommend approval, to the City Council, of the code amendments to Title VIII pertaining to construction specifications as proposed on July 7, 2015.

ORDINANCE NO. 15-14

AN ORDINANCE AMENDING VARIOUS SECTIONS OF TITLE VIII OF THE SYRACUSE CITY MUNICIPAL CODE PERTAINING TO CONSTRUCTION SPECIFICATIONS.

WHEREAS, due to the pace of growth in the City there are from time to time small proposed changes to various City ordinances that are warranted; and

WHEREAS, these small proposed changes come to the attention of the Planning Commission through varied means including but not limited to questions, concerns or complaints from the general public and or from developers that are seeking clarification on the language in the City code; and

WHEREAS, the Planning Commission takes each question or concern under consideration and addresses it on case-by-case basis in a fair and judicious manner paying specific attention to the reasonableness and legality of the request as well as the reasonableness and legality of the City's own ordinances; and

WHEREAS, after such consideration Planning Commission will either support and sustain current ordinances as adopted or in other cases have staff research and address each proposed change and put forth amendments to existing ordinances; and

WHEREAS, the Planning Commission now hereby wishes to amend various sections of Title X to address such proposed changes.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF SYRACUSE CITY, STATE OF UTAH, AS FOLLOWS:

Section 1. **Amendment.** The following sections of Syracuse City Municipal Code are hereby amended as follows:

Exhibit A

Section 2. Severability. If any section, part or provision of this Ordinance is held invalid or unenforceable, such invalidity or unenforceability shall not affect any other portion of this Ordinance, and all sections, parts and provisions of this Ordinance shall be severable.

Section 3. Effective Date. This Ordinance shall become effective immediately after publication or posting.

PASSED AND ADOPTED BY THE CITY COUNCIL OF SYRACUSE CITY, STATE OF UTAH, THIS 14th DAY OF JULY, 2015.

SYRACUSE CITY

ATTEST:

Cassie Z. Brown, City Recorder

Mayor Terry Palmer

Voting by the City Council:

	"AYE"	"NAY"
Councilmember Peterson	___	_____
Councilmember Lisonbee	___	_____
Councilmember Duncan	___	_____
Councilmember Johnson	___	_____
Councilmember Gailey	___	_____

Chapter 8.45

CONSTRUCTION SPECIFICATIONS

Refer to the Syracuse City Engineering Standards and Construction Specifications adopted by the City Council through resolution.

~~Sections:~~

~~8.45.10 Earthwork.~~

~~(A) General Description. Excavation for street pavement and/or curb and gutter shall consist of the removal of all materials within the lines, grades and slopes shown on the plans or established by the City Engineer, including all earth, stone, loose rock, sand, clay, shale, hard pan, boulders, solid rock, stone blocks, roots, brush, trees, rubbish and all other materials of whatever nature that may be encountered within the lines, grades and slopes above described or that may be required in grading approaches to intersecting streets and alleys or in providing ditches at the ends of pipes, waterways and flumes.~~

~~(B) Compaction Control and Testing. Maximum density, as used in these specifications, shall be defined as the maximum density obtained in the laboratory by ASTM D-1557. In-place density test procedures shall be in accordance with ASTM D-2922 and ASTM D-3017.~~

~~It shall be the responsibility of the contractor to accomplish the specified compaction for backfill, fill, and other earthwork. It shall be the responsibil-ity of the contractor to control his operations by confirmation tests to verify and confirm that he has complied, and is complying at all times, with the requirements of these specifications concerning compaction, control, and testing.~~

~~The frequency of the contractor's confirmation tests shall be not less than as follows and each test location for trenches shall include tests for each~~

layer, type, or class of backfill from bedding to finish grade or as required by Inspector.

(1) Trenches.

(a) Open fields: two every 1,000 linear feet;

(b) Along dirt or gravel roads or off traveled right-of-way: two every 500 linear feet;

(c) Crossing paved roads: two locations along each crossing;

(d) Under pavement cuts or within two feet of pavement edges: one location every 400 linear feet;

(2) Structural backfill: one every 20 cubic yards;

(3) Embankment or fill: one every 200 cubic yards;

(4) Base material: one every 50 cubic yards.

Confirmation tests shall be paid by the contractor.

Copies of the test reports shall be submitted promptly to the Inspector. The contractor's tests shall be performed by a soils testing laboratory acceptable to the Inspector.

If compaction fails to meet the specified requirements, the contractor shall remove and replace the backfill at proper density or shall bring the density up to specified level by other means acceptable to the Inspector. Subsequent tests required to confirm and verify that the reconstructed backfill has been brought up to specified density shall be paid by the contractor. The contractor's confirmation tests shall be performed in a manner acceptable to the Inspector. Frequency of confirmation tests for remedial work shall be double that amount specified for initial confirmation tests.

(C) Stripping. On all portions of the work, where filling is required, the entire area shall first be stripped of all undesirable materials, as designated by the Inspector. The resulting surface, after the removal of all undesirable material, shall be scarified to the extent designated by the Inspector and brought to a uniform surface by means of graders or other suitable equipment, and shall be completed as provided in these specifications, before any embankment material is placed.

(D) Disposal of Excess Material. All excess or undesirable material that may be encountered in the work shall be disposed of by the contractor, in a manner approved by the Inspector, but it shall not be placed on other streets or alleys without the Inspector's approval nor on private property without the approval of the owner, which approval shall be obtained by the contractor in writing.

(E) Embankment. All excavated materials that have been approved by the Inspector for embankment purposes and that are needed for that purpose shall be used at the points designated by the Inspector and in the following manner:

(1) The embankment shall be built by depositing approved material, in approximately level, uniform layers, not exceeding six inches in thickness after compacting.

(2) The material in place at both ends of any embankment, or where net material is placed against material in place, shall be plowed into the new material as the work progresses and shall be thoroughly scarified and worked into the new material and brought to the proper elevation before rolling of the layer being placed is commenced.

(3) If the material as found in excavation is too wet, as determined by the Inspector, then it shall be permitted to dry out to the extent required before being used in the embankment; or the material may be placed to the proper thickness on the embankment and worked with satisfactory equipment until the quantity of moisture in the material has been reduced to that required for maximum compaction. If the material as found in excavation is too dry, as determined by the Inspector, then it shall be moistened to the extent required and worked with harrows or other suitable equipment until the moisture throughout the material is uniform and contains the proper percentage of moisture, as determined by the Inspector, for proper compaction.

(4) The embankment shall be built to the lines, grades, and slopes shown on the plans or established by the City Engineer.

(5) All embankments shall be compacted to 95 percent of maximum density (AASHO T-99 Test Procedure) unless otherwise specified by the City.

(F) Excavation Below Subgrade. If soft or otherwise undesirable material is found to exist at and below the subgrade elevation, then such material shall be removed to the extent and in the manner designated by the Engineer.

(G) Removal of, Building and/or Rebuilding of Existing Structures. Should it be found necessary to remove, build and/or rebuild existing pipelines,

flumes, monuments, manholes and other structures, or to reset metal covers and frames, etc., then said work shall be done as shown on the approved plans.

(H) Preparation of Subgrade. In excavating the required material, the work shall be so handled as to leave in place sufficient material above the finished subgrade elevation to provide for compaction in building the subgrade to the prescribed elevation.

After the materials have been excavated, as above described, then the subgrade shall be scarified, after which the material shall be accurately graded to the required form of the finished subgrade and rolled with approved rollers to compaction required. If additional moisture is required, in order to produce the compaction required, then the proper quantity shall be applied uniformly, either before or after scarifying. If necessary, the material shall be scarified after the water is applied, in order to obtain uniform distribution of moisture and bring the material to a suitable condition. All rocks, boulders, or other unsuitable material shall be removed. The quantity of material, and its distribution, before rolling, shall be such that when compacted the required form and elevation will be secured. All subgrade shall be compacted to 95 percent of maximum density (AASHO T-99 Test Procedure).

(I) Completed Subgrade. The completed subgrade shall accurately conform to the lines, grades and slopes shown on the plans or designated by the Engineer and shall be maintained in satisfactory condition by the contractor. No driving or wheeling will be permitted on an unprotected subgrade without the approval of the Inspector.

(J) Sub-Base. The depth of sub-base material shall be determined by soil exploration and load requirements. Such soil analysis shall be in accordance with acceptable engineering practices. [Code 1971 Appendix § 1.]

8.45.20 Surfacing and paving.

(A) General. This section covers the requirements for bituminous surface paving on roads. All streets shall be surfaced in accordance with the following:

(1) Sub-base as determined necessary upon analysis of soil characteristics and loads to be imposed on the pavement structure.

(2) Eight inch minimum crushed gravel base course over prepared subgrade.

(3) Three inch minimum compacted thickness plant mix asphalt surfacing on all streets.

(B) Base Course. Base for all streets shall consist of hard, durable particles or fragments of stone or gravel, screened or crushed to the required size and grading. The material shall be free from balls of clay, alkali, adobe or other deleterious matter, and shall conform to the following gradation when tested in accordance with AASHTO T-27 or ASTM C-136 and AASHTO T-11 or ASTM C-117.

Sieve Size	Percent Passing
1-1/8 inch	100
No. 4	38 – 65
No. 8	25 – 60
No. 30	10 – 40
No. 200	3 – 12

The material shall be deposited and spread in a uniform layer at optimum moisture content, without segregation of size, with such depth that when compacted in layer will have the required thickness.

Each layer shall be compacted for the full width and depth by rolling with a pneumatic roller weighing at least 10 tons. Alternate blading and rolling will be required to provide a smooth, even and uniformly compacted course true to cross-section and grade. Places inaccessible to rolling shall be compacted with mechanically operated hand tampers.

The gravel base shall be compacted to not less than 95 percent maximum dry density as determined by AASHTO T-180. Surfaces shall be true to the established grade with thickness being not less than one-fourth inch from the required layer thickness and with the surface elevation varying not more than three-eighths inch in 10 feet from the true profile and cross-section.

(C) Bituminous Prime Coat. The bituminous prime coat shall consist of an application of hot bituminous material on a previously prepared base course or other surface to be paved. Prior to the application of the prime coat, an inspection of the area to be coated will be made by the Inspector to determine its fitness to receive the bituminous priming material. That portion of the base course

prepared for immediate treatment, if considered excessively dry, shall be lightly sprinkled with water immediately in advance of the application to assure a uniform spread of the bituminous material.

Bituminous material used for the prime coat shall conform to the requirements for RC-250 and shall be applied at a temperature of 175 degrees Fahrenheit to 225 degrees Fahrenheit at a rate of 0.3 to 0.4 gallons per square yard by use of a bituminous distributor.

Immediately following the preparation of the base course, the bituminous material shall be applied by means of a bituminous distributor at the temperature previously specified. The priming material shall be so applied that uniform distribution is obtained at all points of the surface to be primed.

Following the application of prime material, the surface shall be allowed to dry for a period of not less than 48 hours without being disturbed, or for such additional period of time as may be necessary to attain penetration into the base course and drying out or evaporation of the volatiles from prime material. The contractor shall furnish and spread sufficient acceptable sand on all areas which show an excess of bituminous material to effectively blot up and cure the excess.

The primed surface shall be maintained by the contractor until the succeeding layer of pavement has been placed. During this interval, the contractor shall protect the primed surface against damage and shall repair all broken spots.

The bituminous distributor shall be so designed and equipped as to distribute the bituminous material uniformly at even heat on variable widths of surface at a readily determined and controlled rate with pressure range of 25 to 75 pounds per square inch.

The prime coat shall be applied only when the base course is dry or contains moisture not in excess of that which will permit uniform distribution and the desired penetration. It shall not be applied when atmospheric temperature is below 60 degrees Fahrenheit.

(D) Tack Coat. Transitions of asphalt to concrete or asphalt that exists and is to be paved over shall be tack coated with a Grade SS-Ih anionic emulsion at a rate of 0.10 gallons per square yard.

(E) Asphalt Concrete. Asphalt cement shall conform to the requirements for asphalt cement, AR-2000, AASHTO M-266 (AR-40) or ASTM D-3381. Mixing temperature shall be not lower than 275 degrees Fahrenheit, nor higher than 325 degrees Fahrenheit.

Mineral aggregate shall consist of coarse aggregate of crushed stone or gravel composed of hard, durable particles, sand, and a filler as specified in the following. The portion of the material retained on the No. 8 sieve shall be known as coarse aggregate and that portion passing a No. 8 sieve shall be known as fine aggregate. The composite material shall be uniformly graded from coarse to fine and shall meet the requirements of one of the following gradings when tested in accordance with AASHTO T-27 or ASTM C-136. Asphalt concrete shall be as indicated on the plans, but if not indicated shall be two course plant mix. Unless otherwise indicated on the plans, asphalt concrete having an overall thickness of over three inches shall be the two course plant mix.

Plant Mix, Two Course				Plant Mix, Single Course	
Base, 1-3/4 Inch Thick Minimum					
Seal, 3/4 Inch Thick Minimum				3 Inch Thick Minimum	
Sieve Size	Percent Passing	Sieve Size	Percent Passing	Sieve Size	Percent Passing
1/2"	100	1-1/4"	100	3/4"	100
3/8"	95 – 100	1"	87 – 100	1/2"	75 – 95
No. 4	50 – 70	3/4"	75 – 90	3/8"	65 – 85
No. 8	35 – 55	3/8"	55 – 72	No. 4	50 – 65
No. 30	15 – 30	No. 4	40 – 60	No. 8	35 – 50
No. 100	5 – 15	No. 8	30 – 50	No. 30	15 – 30

Plant Mix, Two Course				Plant Mix, Single Course	
Seal, 3/4-Inch Thick	Minimum	Base, 1-3/4 Inch Thick Minimum		3 Inch Thick Minimum	
Sieve Size	Percent Passing	Sieve Size	Percent Passing	Sieve Size	Percent Passing
No. 200	3—8	No. 30	15—30	No. 100	5—15
		No 100	5—15	No. 200	3—8
		No. 200	3—8		

At least 70 percent by weight of each size of aggregate included in the coarse aggregate shall consist of particles which have at least one rough, angular surface produced by crushing.

Coarse aggregate shall have a percentage of wear of not more than 50 at 500 revolutions, as determined by AASHTO T-96 or ASTM C-131.

Plasticity index of the aggregate shall be not more than two as determined by AASHTO T-90 or ASTM D-431B.

Sand may be added to the crusher or pit run product to supply any deficiency in the No. 8 mesh size, and filler may be added to supply any deficiency in No. 200 mesh material. If the aggregate contains an excess of sand, wasting will be required.

Finely powdered limestones, portland cement, or other artificially or naturally powdered mineral dust, acceptable to the Inspector, shall be used for filler.

(F) Construction Methods and Equipment. The methods employed in performing the work, all equipment, tools and machinery and other appliances used in handling the materials and executing the work shall be the responsibility of the contractor. The contractor shall make such changes in the methods employed and in the equipment used as are necessary whenever the bituminous mix being produced does not meet the specifications herein established.

(G) Spreading and Compaction. The bituminous mixtures shall be spread with self-propelled mechanical spreading and conditioning equipment capable of distributing at least a 12-foot width. The mixture shall be spread and struck off in such a manner that the finished surface shall result in a uniform smooth surface. The longitudal joints in succeeding courses shall be offset at least six inches transversely to avoid a vertical joint through more than one course.

The temperature of the bituminous mix shall be between 250 degrees Fahrenheit and 350 degrees Fahrenheit when placing. At no time will the temperature of the mix exceed 350 degrees Fahrenheit.

After the mixture has been spread the surface shall be rolled in the longitudinal direction commencing at the outside edge or lower side and preceding to the inner or higher side. Each pass of the roller shall overlap the preceding pass at least one-half the width of the roller. Rolling shall be continued until 95 percent of the laboratory density as determined in accordance with ASTM Designation D-1559 for the bituminous mixture being used has been obtained.

Rolling operations shall be conducted in such a manner that shoving or distortion will not develop beneath the roller.

The surface of the pavement, after compaction, shall be uniform and true to the established crown and grade. When tested with a 10-foot straight edge placed parallel to or perpendicular to the centerline of the pavement the surface of the pavement at any point shall not deviate from the lower edge of the straight edge by more than one-quarter of an inch. All high and low spots shall be remedied immediately by removing the wearing course material over the affected areas and replacing it with fresh, hot wearing course and surface finish material and immediately compacting it to conform with the surrounding area.

All traffic shall be kept off the completed surface for a minimum period of 24 hours.

(H) Weather Limitations. No bituminous surface shall be placed when the temperature of the air or road bed is 50 degrees Fahrenheit or below, during rainy weather, when the base is wet or during other unfavorable weather conditions as determined by the Inspector. The air temperature shall be measured in the shade.

(I) Restoring Pavements.

(1) Cutting and Removing. The pavement shall be cut vertically in neat lines with necessary tools by the contractor in such manner as not to damage the adjacent pavement. It shall be cut along straight lines forming the edges of the trench. The portion to be removed shall be broken up in such manner as not to damage the pavement outside the lines of the trench. If any pavement outside the lines of the trench is damaged, it shall be removed and restored as hereinafter provided at the contractor's expense. Concrete driveways, sidewalks and curb and gutter shall be removed in a similar manner. All waste material resulting from the above operations shall be immediately removed from the site of the work and all costs to the contractor for removing and disposing of said material shall be included in the unit prices bid under the appropriate items in the schedule.

(2) Temporary Pavement. Between street intersections, unless otherwise ordered by the Engineer, the backfilling shall be built up slightly above the surface of the pavement, oiled and maintained in good condition until the contractor is ready to place the new pavement, when the backfilling shall be removed to the subgrade elevation or bottom of the pavement. This work shall be done accurately to the proper elevation and all loose material removed. If any material is removed below the established subgrade elevation, said space shall be filled with similar material to that used for pavement base, at the contractor's expense, after which the new pavement shall be placed according to the City's specifications for the type of pavement that was removed, or such other type as may have been ordered to replace it.

At street intersections a temporary pavement, satisfactory to the Inspector, shall be placed and maintained in good condition until the contractor is ready to place the new pavement, when it shall be removed accurately to the subgrade elevation of the pavement and the new pavement placed according to the City's specifications for the type of pavement that was removed, or such other type of pavement as may have been ordered to replace it.

Such temporary bridges as may be required to properly handle the traffic during the progress of the construction shall be built, maintained and removed at the contractor's expense.

(3) Driveways, Sidewalk or Curb and Gutter. Where a trench is located under private driveways, sidewalk or curb and gutter, the subgrade shall be prepared in the same manner as described for pavement, and the concrete driveway, sidewalk or curb and gutter shall be rebuilt according to the City's specifications on file in the Inspector's office, for the type of driveway, sidewalk or curb and gutter that was removed, or such other type as may have been ordered to replace it.

(4) Repairing Damaged Pavement, Driveway, Sidewalk or Curb and Gutter. If any pavement, concrete driveway, sidewalk, or curb and gutter has been damaged outside the lines of the trench, while trenching, damaged areas shall be removed along straight lines and at right angles, and all cut surfaces shall be vertical, and removal and rebuilding of the damaged portion shall be done by the contractor at his own expense, and to the full satisfaction of the Engineer.

(J) Seal Coat.

(1) Slurry Seal. After allowing newly paved roads to sit for one year, the contractor shall apply a Type II slurry seal coat in accordance with approved specifications and standards. The City, at its option, may allow chip and seal application to satisfy requirements of this section. Slurry seal shall consist of mixing asphalt emulsion, aggregate, and water and spreading the mixture on dedicated roadway surfaces shown on the plat and plans approved by the City, as specified in these specifications and the special provisions, and as directed by the City Inspector.

(2) The materials for slurry seal immediately prior to mixing shall conform to the following requirements:

(a) Polymer Modified Asphalt Emulsion. Polymer emulsified asphalt shall be a quick traffic, quick cure (QT-QC) type, shall be a homogeneous brown color throughout and show no separation after thorough mixing, shall break and set on the aggregate within five minutes and shall be ready for cross traffic within 45 minutes. The polymer asphalt emulsion, upon standing undisturbed for a period of 24 hours, shall show no white or milky

colored substance on its surface and conform to the requirements in Table I.

Table I		
Test on Emulsion	**Test Method**	**Requirement**
Viscosity, SSF, @ 77 degrees F., sec	ASTM D 244	15—90
pH		1—3
Distillation Residue %, Minimum		60
Test on Residue from Distillation Test		
Penetration, 77 degrees F., 100g, 5s	ASTM D 5	40—80
Softening Point (Ring & Ball), degrees F.	ASTM	130 +
Ductility, 77 degrees F. (25 degrees C.), 5 cm/Min., Minimum	ASTM D 113	25
Fraass Breaking Point (degrees C.) min.	DIN 52012	-18

Water shall be potable, free of harmful soluble salts and shall be of such quality that the asphalt will not separate from the emulsion before the slurry seal is in place in the work.

Aggregate shall consist of sound, durable, crushed stone or crushed gravel and approved mineral filler. The material shall be free from vegetable matter and other deleterious substances. Aggregates shall be 100 percent crushed with no rounded particles, volcanic in origin and black in color. The percentage composition by weight of the aggregate shall conform to the following grading:

Type II Slurry	
Sieve Sizes	**Percentage Passing**
3/8" (9.5 mm)	100
No. 4 (4.75 mm)	90—100
No. 8 (2.36 mm)	65—90
No. 16 (1.18 mm)	40—70
No. 30 (600 µm)	25—50
No. 200 (75 µm)	5—15
Theoretical asphalt content, percent based on dry aggregate	7.5—13.5
Approximate application rate (pounds/square yard)	14—18

[Ord. 04-11; Code 1971 Appendix § 2.]

8.45.30 Portland cement concrete.

(A) Portland cement shall conform to the "Standard Specifications for Portland Cement," ASTM designation C-150-56 and subsequent revisions or addendums and shall be Type II. In areas where there is no exposure to sulfates in the soil or ground water, Type I cement is permissible.

(B) A certified analysis of the cement shall be presented to the City Engineer upon request.

(C) Cement content shall not be decreased because of the addition of certain admixtures.

(D) Fine and course aggregates shall conform to the specifications for concrete aggregates, ASTM Designation C-33-57, and subsequent revisions or addendums.

(E) The maximum size of the aggregate shall not be larger than one-fifth of the narrowest dimension between forms of the member for which the concrete is to be used, nor larger than three-fourths of the minimum clear spacing between reinforcing.

(F) Water used in mixing concrete shall be clean and free from strong acids, alkalies, oils, salts, organic materials, or other deleterious materials.

(G) The concrete shall contain a minimum of 6 bag (94#/bag) cement per cubic yard, and have a minimum compressive strength at 28 days of 4,000 psi maximum water content 0.048. Under no circumstance will a slump in excess of four inches be permitted.

(H) Not less than one test shall be made for each 150 cubic yards of concrete, nor less than one test for each day's concreting. These tests shall be made at the option of the Inspector.

(I) Proper mixing shall be accomplished either by truck or by stationary mixers.

(J) The place of deposit shall be prepared by adequate forming, proper compaction, necessary

drainage, and sufficiently moistened to minimize loss from the freshly placed concrete.

(K) Forms may be removed when the concrete has sufficient strength to carry its own weight and the loads upon it with safety (approximately 75 percent of design strength or at the discretion of the Engineer).

(L) Finishing shall provide a pleasant appearing surface, as well as a protective coat against weathering effects.

(M) All concrete surfaces shall be cured for a period of seven days by keeping the surface of the concrete continually visibly moist. An acceptable curing compound may be substituted for water where approved by the Inspector.

(N) In all cases the contractor shall assume all responsibility arising from preparing, placing, and the removal of forms, and shall assure himself that the concrete is properly cured to sustain loads before forms are removed.

(O) No frozen materials or materials containing ice shall be used. All concrete materials, forms, fillers and ground with which the concrete is to come in contact shall be free from frost. Whenever the temperature of the surrounding air is below 40 degrees Fahrenheit, all concrete, when placed in forms, shall have a minimum temperature of 55 degrees Fahrenheit, and shall be maintained at a temperature of not less than 40 degrees Fahrenheit for at least 72 hours. Concrete subject to freeze/thaw shall be air entrained to a content of six percent plus one and one-half percent.

(P) The City Inspector reserves the right to forbid the use of material from any plant, pit or source when the character of material, equipment in use or the method of operation is such in his opinion as to make it doubtful that a reasonable uniform class of material will be furnished.

(Q) Transporting, Placing, and Compacting. The transporting equipment shall be such as to deliver the concrete to the place of use without segregation and without undue loss of moisture. If the concrete is being placed in walls or structures more than five feet high, it shall be deposited into final position by means of tremies or similar equipment, and the maximum lateral movement of the concrete from any point of deposit shall not be more than five feet. It shall be deposited in even layers, not more than 24 inches in depth, and each layer shall be thoroughly vibrated preceding lift and next to the forms to ensure a smooth surface and the removal of air pockets. Particular attention shall also be given to working of the concrete around reinforcing steel and embedded fixtures in such manner as to produce a continuous homogeneous mass filling all corners and eliminating segregation of aggregate and air pockets. An internal vibrator shall be inserted vertically at intervals of 18 inches to 30 inches, depending on the thickness of the concrete. It shall be held in position and gradually withdrawn when air bubbles no longer come to the surface, which will usually require from five to fifteen seconds. All concrete shall be vibrated within 15 minutes after being placed in the forms. The vibrator shall not be permitted to come in contact with the forms, the reinforcing steel or embedded fixtures or to overvibrate the concrete at any point. Concrete shall not be transported laterally by means of vibrators.

(R) Joining New Concrete to Old. In joining new concrete to old, the old concrete shall be thoroughly treated with concrete epoxy preceding the placing of the new concrete. All surface film shall be removed from the old concrete, the surface roughened and thoroughly washed to remove loose particles. The methods employed to prepare the surface of the old concrete shall be approved by the Inspector in advance. A layer of mortar of the same proportions and consistency as the mortar used in the new concrete shall be thoroughly boomed into the surface of the old concrete, immediately before the new concrete is placed, but no pools of water shall be permitted on the surface of the old concrete when the mortar is placed.

(S) An original copy of the concrete batching ticket shall be given to the City Inspector at time of delivery. Ticket is to include the plant designation, ticket number, mix design number, slump, air entrainment, type of concrete, gallons of water added on site, time of leaving plant, time of arrival on site and bag mix. Concrete could be rejected if ticket is not available and does not meet City standards. [Code 1971 Appendix § 3.]

8.45.40 Steel reinforcement.

(A) General Description. (Specifications shall only apply where the International Building Code as adopted by the State of Utah does not.) All steel bars used for concrete reinforcement shall be grade

60 deformed bars conforming to ASTM A-615 and shall include the supplementary requirements.

(B) Cutting and Bending. All cutting and bending shall be done at the mill or shop unless provisions satisfactory to the Inspector are made for handling this work in the field. The radius of curvature of the bends shall not be less than four diameters. All bending shall be done cold. Heating preparatory to bending will not be permitted. All steel shall conform accurately to the dimensions shown on the plans.

(C) Surface Condition. All steel shall be clean and free from mill scale, flakes of loose rust, cement, concrete, paint, oil, grease or any other foreign material, except that a thin layer of tightly adhering rust may be permitted if approved by the Inspector.

(D) Placing. All reinforcement bars shall be placed accurately, as shown on the plans, wired at intersections and spaced and supported by means of metal chairs, spacers, hangers or other devices approved by the Inspector. The placing of bars on layers of fresh concrete as the work progresses will not be permitted. The reinforcement shall be securely bound together and rigidly held in the required position. Where splices are made, the base shall be tapped 40 diameters or a minimum of 20 inches and tightly wired together.

(E) Inspection. No concrete shall be placed in any reinforced concrete structure until the steel and its placement have been inspected and approved by the Inspector and he has given permission to proceed with the placing of concrete. Any concrete placed in violation hereof shall be rejected and shall be removed by the contractor at his own expense.

(F) Storage and Protection. All reinforcement steel shall be stored in such manner as to be protected from the elements. It shall be stored on skids or other supports approved by the Inspector, and shall be protected against physical damage. No bars that are bent, twisted, kinked or warped shall be used in the work. No bars that have been bent shall be straightened and used in the work.

(G) Welded steel wire fabric shall conform to ASTM Designation A-185. [Code 1971 Appendix § 4.]

8.45.50 Sidewalks.

(A) Excavation. All excavation required for concrete sidewalks and preparation of subgrade shall be made as provided in these specifications and shall include all applicable provisions therein contained. If the sidewalk under construction does not cover the entire area between the curb and the property line, then after the forms have been removed, the depressions along the edges of the sidewalk pavement shall be backfilled with approved material, properly moistened and hand tamped to the satisfaction of the Inspector, and the areas between the sidewalk and the curb and between the sidewalk and the property line shall be finished to a uniform slope, as shown on the plans, with fine material, free from stones and large lumps, and then neatly surfaced with hand rakes. Where the excavation extends into lawns, the sod shall be taken up, carefully preserved and relaid by the contractor.

(B) Subgrade. After having excavated the area as described in subsection (A) of this section, it shall be compacted immediately in advance of placing the base material and shall be maintained in a suitable condition until the base has been placed.

(C) Base Course. The base course shall be composed of natural gravel or crushed gravel placed on the prepared subgrade. The gradation of the aggregate shall be as follows:

Sieve Size	Percent Passing Gradation Band
1 inch	100
1/2 inch	70 100
No. 8	40 70
No. 16	20 40
No. 50	10 27
No. 200	4 13

The base course shall be placed to a depth of four inches and shall be compacted to 95 percent of maximum laboratory density as determined by AASHTO T-180 Method D. Compaction in conformance with SCC 8.45.010 shall be to the satisfaction of the City Inspector.

(D) Forms. The forms shall comply with all applicable requirements of these specifications. The width of the material shall be equal to the full

depth of the sidewalk pavement and the upper edge shall be set accurately to the required elevation of the finished surface.

(E) Resetting Frames and Covers, Etc. Where there are structures existing, within the area of the sidewalk being constructed, such as valve boxes, meter boxes, hydrant boxes, sewer manholes, etc., that require resetting of frames and covers, or the building up or cutting down of the structure to fit the grade of the sidewalk, this work shall be done by and at the expense of the contractor unless otherwise provided in these specifications. Work shall be done to the satisfaction of the Engineer.

(F) Class of Concrete to Be Used. In the construction of concrete sidewalks air entrained concrete and Type II cement shall be used.

The concrete materials and the proportioning, mixing, transporting, placing, protection and curing of the same shall conform to all the applicable requirements of SCC 8.45.030. Vibration will not be required.

(G) One Course Sidewalk. The concrete shall be placed on the subgrade, prepared as above described, to the full depth of the sidewalk, as shown on the plans, in one course. The full quantity of concrete required shall be deposited in as near its final position as practical in one operation, and the placing shall be completed with shovels. Spades shall be used along the edges to bring the concrete into uniform and complete contact with the forms. Hand tampers approved by the Engineer shall be used for compacting. A heavy iron shod straight edge shall be used for striking off the concrete at the proper elevation. Wood floats shall be used for bringing the material to a uniform surface, and after the surface has partially set, all edges shall be finished with an approved edging tool having a three-eighths inch radius, and the surface shall then be finished with a wood float or by floating with a steel trowel as directed by the Inspector. On steep grades the surface shall be roughened as directed by the Inspector.

(H) Sidewalk Pavement. All concrete sidewalk shall be constructed to the lines, grades and dimensions as shown on the prepared plans, or as directed otherwise by the Engineer. All concrete sidewalk shall be installed by the developer prior to the final warranty inspection. It shall be built four inches thick except at and through driveways. Concrete sidewalk built at and through resident driveways that are used generally for passenger car traffic shall be six inches in thickness through the entire width of driveway. At driveways, other than resident driveways, such as service stations and at all driveways used for commercial and industrial traffic, the thickness of the sidewalk through the entire driveway shall be as shown on the drawing, or as determined by the Engineer; but in no case shall the thickness of the concrete walk be less than seven inches.

(I) Joints. Transverse expansion joints shall be constructed in all concrete sidewalk at intervals of approximately 32 feet. These joints shall be one-half inch in thickness and shall run the full width and depth of the sidewalk pavement. Expansion joints shall also be constructed between the sidewalk and curb, between the sidewalk and buildings abutting said sidewalk, around all poles, hydrants, manhole frames and/or other structures coming within or immediately adjacent to the sidewalk area, and at such other points as shown on the plan or as directed by the Engineer. The width of expansion joint at the above-mentioned locations shall be as shown on the drawing, or as directed by the Engineer, except that the expansion joint abutting curb shall be a special joint one inch wide by eight inches deep. All expansion joints shall extend the full depth of the sidewalk pavement being constructed and shall be constructed at right angles to the centerline and surface of the sidewalk pavement. A metal holder shall be used to hold the expansion joint rigidly and securely in place during the sidewalk construction.

(1) The expansion joint filler to be used shall be prepared resilient, nonextruding joint filler conforming to the requirements of ASTM specifications, designation D-544-52T, or as last revised, and as approved by the Engineer, cut or molded to proper dimensions, and it shall be so placed in relation to surface of sidewalk pavement to allow for pouring of joint sealer compound.

(2) In addition to the expansion joint all concrete sidewalks shall be marked transversely with a marking tool, at intervals equal to the width of the sidewalk being built, and every third marking shall be a contraction joint. Each contraction joint shall be finished with an edging tool and shall be cut to a depth of one-quarter of the sidewalk slab thickness. Additional contraction joints shall be provided as and where shown on the drawing or as

directed by the Engineer, or as further described in the "Detail Specification." Ordinary markings shall not be more than one-quarter inch in depth.

(3) All expansion joints and contraction joints constructed in concrete sidewalks shall be sealed by a hot poured rubberized asphalt joint sealing compound that is resilient and adherent to the concrete to prevent infiltration of water and foreign substances into and through joints. The joint sealing compound used shall first be submitted to the Engineer and approved by him, and the compound shall be handled and placed as directed and to the satisfaction of the Inspector.

(4) All above joint filler and sealer shall be furnished and properly placed at the expense of the contractor, unless otherwise provided in these specifications.

(J) Wasted Concrete. Retempering concrete that has partly set will not be permitted. Concrete that for any reason has been mixed too wet shall be wasted. Concrete that is partly set shall not be used in the work. Waste concrete shall be disposed of by the contractor in a manner satisfactorily to the Inspector.

(1) All concrete surfaces not coming in direct contact with the forms shall be struck off with a straight edge to the exact form and elevation required. The surface shall then be finished with a wood float or steel trowel as shown on the plans or as ordered by the Inspector, and the edges shall be finished with an approved edging tool.

(2) If any special type of finish is required on any of the concrete included in this section, detailed requirements will be found in the "Detail Specifications" attached hereto.

(K) Curing. All portland cement concrete shall be cured by acceptable means and approved by the Engineer. The work shall be done in an efficient and systematic manner. The curing period shall not be less than seven days.

(L) Concreting in Cold Weather. If the contractor desires to place concrete in cold weather he shall assume all responsibility for damage that may be caused by freezing or by any other cause, even though permission to proceed may have been given by the Engineer. In no case, however, shall concrete be placed when the temperature is 45 degrees Fahrenheit and falling, unless the contractor has complied with the following requirements and such additional precautions as he may consider to be necessary or advisable:

(1) Provision shall be made for heating the water and, if necessary, the aggregates also. If the aggregates are heated, it shall preferably be done with steam by means of closed steam coils.

(2) The temperature of the mixed concrete when placed in the forms shall be between 50 degrees Fahrenheit and 70 degrees Fahrenheit, depending on the temperature of the air.

(3) When the concrete has been placed, the forms and concrete shall be covered with tarpaulins or other approved covering and a sufficient number of perforated steam pipes provided under the covering to maintain the temperature needed to ensure proper curing.

(4) The use of any admixture to lower the freezing point of the concrete is forbidden.

(5) No concrete shall be placed upon a frozen subgrade and no frozen materials shall be used in the concrete.

(6) Salamanders shall not be used without special permission from the City Engineer, and if the use of salamanders is permitted, then each salamander shall have a vessel containing water placed on it in order to maintain the necessary humidity to prevent drying of the concrete. Water shall be maintained continuously in the vessel.

(7) The material shall be free from ice, snow and frozen lumps when introduced into mixer.

(M) Concreting in Hot and/or Dry Weather. Whenever the ambient temperature is above 80 degrees Fahrenheit or the humidity is below 10 percent, the City Engineer may, at his discretion, require trial batches to determine the period of initial set. If, in the opinion of the City Engineer, weather conditions are such that the initial set is accelerated, the maximum period specified for mixing, placement and compaction shall be reduced to allow at least 10 minutes time before initial set. The term "initial set" shall be construed as the time in which, in the opinion of the Engineer, the concrete is no longer workable. Necessary steps will be taken at the direction of the Engineer to protect the concrete from undesirable effects of heat. These steps may include:

(1) Spraying forms, reinforcing steel and subgrade to prevent absorption of water from mix.

(2) Erecting sun shades and wind breaks.

(3) Protecting slabs before final finishing by covering with waterproof or Visqueen.

(4) Spraying outside of forms to cool concrete.

(5) Cooling mixing water.

(6) Spraying coarse aggregate to reduce temperature.

(N) Temporary Stoppage of Work. If, for any reason, work is discontinued for a period long enough for the concrete to become set or partially set, then a construction joint shall be provided, preferably at a transverse expansion joint, or if that is impracticable, then at a transverse contraction joint. A bulkhead shall be placed between and at right angles to the side forms and at right angles to the surface of the pavement. It shall extend through the full depth of the pavement and the upper edge shall be set flush with the upper edge of the forms. The concrete shall be finished against this bulkhead to the full depth of the pavement and any excess concrete shall be wasted, and all work shall be done to the satisfaction of the Inspector before work is stopped. [Ord. 04-11; Code 1971 Appendix § 5.]

8.45.60 Curb and gutter.

(A) Excavation for Curb and Gutter—Preparation of Subgrade, Base and Backfilling. All excavation and preparation of subgrade and base required for construction of concrete curb and gutter and reinforced concrete shall be as outlined in SCC 8.45.070, as determined by the Engineer. Embankment required under the concrete shall be with approved material compacted to 95 percent of maximum density. Base material will be required as outlined in SCC 8.45.050.

(B) Construction. Concrete curb and gutter and reinforced concrete drain gutter shall be constructed in conformity with the lines, grades, slopes, form and dimensions shown on the plans or as designated by the Engineer. In the construction of combined curb and gutter, the entire structure will be built simultaneously and no joint or line of cleavage shall be made between the curb and the gutter.

(C) Class of Concrete. The concrete used for the construction of reinforced concrete drain gutter and concrete curb and gutter shall be air entrained using Type II cement and shall be as outlined in SCC 8.45.030. The curb and gutter shall be constructed monolithically.

(D) Joints. At intervals of 10 feet, joints shall be made by inserting from plates one-eighth inch in thickness and shaped to the exact form and dimensions of the curb and gutter. Plates must be smooth and clean. They shall be oiled with mineral oil immediately before using. Any plate that has become warped or damaged shall not be used. They shall be carefully removed after the concrete has set, and any concrete broken out shall be repaired to the satisfaction of the Inspector.

(1) Expansion joints one-half inch thick shall be provided at approximately 50-foot intervals. The expansion joint filler shall be shaped to the exact form and dimensions of the curb and gutter, shall be one-half inch in thickness, and shall conform to ASTM Designation D-544-52T, or as last revised, and as approved by the Engineer.

(2) At the contractor's option, plates a minimum of two inches deep may be substituted for the full-depth plates at contraction joints only. A full plate must be used at expansion joints and ends of the constructed section, such as at driveways, curved sections and/or where determined by the Engineer.

(3) After division plates have been removed and expansion joints have been properly set, then all joints shall be sealed in a manner and with material approved by the Engineer.

(E) Placing, Compacting and Curing. The method of mixing, placing, compacting, finishing and curing, etc., of the concrete shall conform to all applicable requirements of SCC 8.45.050, as determined by the Inspector.

(1) Curb and gutter may be placed by an approved slip form method. The slip form machine equipment shall spread, consolidate, screen and float finish the freshly placed concrete in such a manner that a minimum of hand float finishing will be required to provide a dense and homogeneous concrete section.

The concrete shall be distributed uniformly into final position by the machine without delay and competently placed true to line and grade.

The contraction joints every 10 feet may be provided by cutting into the fresh concrete to a minimum depth of one and one-half inches to create a weakened vertical plane. The edges of such joints shall be tooled with an edger so as to provide

a neat, workmanlike appearance. Expansion joints will not be required except at adjacent pavement, walk or structure.

This option shall be so noted in the bid schedule by the contractor when this alternate is used in bidding this item.

(F) Reinforced Concrete Drain Gutter. The reinforced concrete drain gutter shall be constructed simultaneously with the adjoining gutters and shall consist of concrete a minimum of eight inches in thickness, unless otherwise shown, and reinforced longitudinally, and shall be built to conform to dimensions, form and to elevations as shown on the plans or as directed by the Engineer.

The concrete used shall be the same as provided in subsection (C) of this section.

The methods of placing, spading, compacting, finishing and curing, as provided in subsection (E) of this section shall apply to the construction of the drain gutter.

Where necessary, in the opinion of the Engineer, gravel shall be placed and thoroughly compacted to form a base for the drain gutter, as directed by the Inspector.

(G) Protection. The contractor shall protect all curb and gutter and drain gutter from damage from traffic and all other causes until accepted by the City. Should the curb and gutter or drain gutter become damaged by weather, traffic, or during the rolling of the street, or from any other cause, it shall be repaired by reconstructing an entire section, by and at the expense of the contractor and to the satisfaction of the Inspector. [Code 1971 Appendix § 6.]

8.45.70 Excavation and backfill for pipelines.

(A) Description. Excavation of trenches for pipelines shall include the excavation of all materials, of whatever nature, except pavement, coming within the designated lines of the trenches, as hereinafter described. It shall include the excavation of all materials required for the construction of manholes, flush tanks, cleanout boxes, meters, pressure regulators and other appurtenances as shown on the drawings or directed by the Engineer. It shall include all excavation required for the removal or lowering of existing pipelines or appurtenances and shall include all necessary clearing and grubbing, all necessary draining, pumping, timbering, sheeting and subsequent removal of these materials as directed by the Inspector. It shall include the disposal of all material excavated and the backfilling of the trenches and appurtenant structures as hereinafter provided.

(B) Subgrade. The subgrade for all pipeline trenches is hereby defined to be the bottom of the trench at the elevation of the outside bottom of the pipe.

(C) Limits of Excavation. The trench shall be excavated 10 inches wider than the inside diameter of the pipe, except for concrete pipe, for which it shall be excavated 12 inches wider. The sides of the trench shall be vertical and the depth of the trench shall be measured from the existing ground surface to the subgrade of the trench; provided, that on paved streets the depth shall be measured from the bottom of the pavement to the subgrade of the trench. All excavation required for manholes, flush tanks, cleanout boxes, meter boxes, valve boxes, pressure regulators and other appurtenances shall be made and measured as described under "Excavation for Structures"; provided, however, that such measurements shall include only such additional material as is excavated outside the designated lines of the trench.

(D) Excavation in Rock. If the bottom of the trench for any pipeline is in rock or in material too hard to permit the bed to be properly formed for the pipes, the excavation shall be made not less than four inches below the established subgrade, and the bottom of the trench shall be brought to subgrade with approved material compacted into place as ordered by the Inspector.

(E) Excavation Other Than Rock. Where the bottom of the trench is composed of material other than rock, care shall be exercised to prevent any disturbance of the material beyond the prescribed lines, and if any material is so disturbed, it shall be tamped back into place in a manner satisfactory to the Inspector.

(F) Undesirable Material. If any undesirable material is encountered in the bottom of the trench, the contractor shall make such additional excavation as the Inspector may direct, and shall replace it with gravel of a quality that will pack, and said gravel shall be tamped into place in four inch layers to the satisfaction of the Inspector.

(G) Bridging. The contractor shall construct suitable bridging over the trench at all street inter-

sections and at driveways to property abutting the line of the work, and at such other points as may be required. The bridging shall be of sufficient strength to carry the loads required. For public vehicle crossings it shall be capable of supporting a 15-ton truck.

(H) Disposal of Seepage, Storm Water or Sewage. The contractor shall remove all seepage, storm water or sewage that may be found or may accumulate in the excavation during the progress of the work. He shall furnish all labor, pumps and other equipment and appliances necessary therefor, and shall keep all excavations entirely free from water at all times during the construction of the work and until the Inspector shall give instructions to cease pumping.

(I) Tunneling. No tunneling will be permitted unless permission is given in writing by the Inspector.

(J) Protection of Pipes. All water, gas, sewer or other pipes encountered in excavating for the trench or appurtenances shall be supported and protected from injury in a manner satisfactory to the Inspector.

(K) Parking, Lawns, Etc. Where the pipeline or structure is located on, along or across sodded parking, lawns or grass plots, the contractor shall in advance of making the excavation, remove the lawn or sod and give it proper care and attention, and shall replace the same in as nearly the original location and condition as is reasonably possible after the excavation has been backfilled and settled. Where it is necessary to deposit the excavated material on lawns or parking during the process of construction, the contractor shall first spread canvas or similar material of suitable size upon the grass to prevent any of the excavated material from coming in contact with the sod. The excavated material shall be removed as soon as possible in order to avoid injury to the grass and the contractor shall replace, at his own expense, any sod that is damaged.

(L) Trench in Unpaved Street. Where the trench is in an unpaved street, the backfilling shall be slightly rounded over the trench and left to settle for such time as the Inspector may direct, at which time it shall be thoroughly rolled with a five-ton truck loaded to capacity. The entire area of the trench shall be covered at least three times by the tread of the tires, after which any depression or irregularities shall be smoothed up to the proper elevation and rerolled. The surface over the trench shall be left in a uniformly smooth condition, conforming to the street surface and all excess material shall be removed. During the interval of waiting for settlement of the material in the trench, the contractor shall keep the surface over the trench oiled and shall maintain said surface in good condition until finally completed and accepted.

(M) All backfill operations shall be completed within 10 calendar days from the start of excavation.

(N) All backfill material shall be free from cinders, ashes, refuse, organic and frozen material, boulders, stones, or other material that, in the opinion of the City Engineer, is unsuitable.

(O) Backfill material under, around, and to one foot over the pipe shall consist of select earth, sand or fine gravel, free from clods, lumps or stones larger than one and one-half inches to their maximum dimensions. This shall be limited to three-fourths inch maximum around PVC, ABS or polyethylene lines. In wet or unstable conditions, material in this zone shall be free-draining, nonplastic material.

(P) Backfill under and around the pipe to the centerline shall be placed in maximum layers of six inches. Bell holes of ample dimensions shall be dug in the bottom of the trench for each pipe. Uniform bearing for each pipe barrel shall be provided for the full length of each pipe. Backfill from the centerline to one foot above the pipe shall be placed and compacted in maximum layers of six inches. Backfilling under improved areas (such as paved streets) shall be placed and compacted in six-inch layers. All layers through improved areas will be compacted to not less than 95 percent of the maximum standard proctor density (T-99). Only in the zone from one foot above the pipe to finished subgrade under unimproved areas will the use of wheel compaction be allowed. Adequate testing by the contractor shall be required to satisfy compaction requirements.

(Q) All subsequent settling of backfill areas will become the sole responsibility of the contractor for a period of not less than two years following the final approval of the entire project.

(R) Impervious backfill shall be required at irrigation canal crossings or other waterway interferences.

(S) All areas disturbed by excavation and backfilling construction shall be restored to original condition, or better, at the contractor's expense. [Code 1971 Appendix § 7.]

8.45.80 Culinary water.

(A) Materials.

(1) Fire Hydrants. Fire hydrants shall meet the requirements of the current AWWA Standard Specification C-502 for fire hydrants for ordinary water works service with the following supplementary qualifications:

(a) Length for depth of trench to be as specified.

(b) Two hose nozzles two and one half inches in diameter with national standard fire hose thread.

(c) One steamer nozzle four and one half inches in diameter when ordered with national standard fire hose thread.

(d) Counter clockwise to open.

(e) Operating nut pentagon, one and one-half inch point to flat.

(f) All internal parts to be removable from top of hydrant without the use of special tools.

(g) Operating valve nut shall be within six inches of finished surface grade.

(2) Flanged Fittings. All flanged fittings shall be in accordance with the current AWWA Specification C-110 for cast iron fittings.

(3) Check Valves. Standard iron body swing check valves for 150 pound working pressure Crane, Ludlow or equal.

(4) Dresser Couplings. Latest standard style with rubber gasket for water. For diameters four inches to 14 inches middle ring to be a minimum of one-fourth inch thick and five inches long with four-and-five-eighths-inch bolts for four-inch diameters; six-and-five-eighths-inch bolts for six- and eight-inch diameters and eight-and-five-eighths-inch bolts for 10-, 12-, and 14-inch diameters.

(5) Steel Pipe. Steel pipe shall conform to the current AWWA Specification C-201.

(6) Certification of all tests required by the American Water Works Association shall be provided by the manufacturer. The three-edge bearing test will be required, upon request of the Engineer.

(7) All pipe shall be standard lengths except for making connections to valves, fittings, and other such closures.

(8) Concrete Pipe. Concrete pipe shall conform in quality to the A.C.I. concrete standards. Sufficient proof of loading, bearing and sizing capacity for its intended use shall be required by the City Engineer.

(9) Cast iron pipe shall conform to the provisions of American Standard Specifications ASA-A2.6 or A21.8 for Class 250 bell and spigot pipe with push on joint. Fittings shall be mechanical or push on joints, Class 250 conforming to ASA-A21.10 and A21.11. The interior of the pipe and fitting shall have a cement mortar lining conforming to the requirements of ASA-A21.4. The outside coating shall be a bituminous coal tar base coating approximately one mil thick.

(10) Ductile Iron Pressure Pipe. Ductile iron pipe where designated shall be centrifugal spun ductile iron, Class 50 or better. Ductile iron pipe shall have a standard thickness cement liner and shall conform to all requirements for AWWA Standard C-151 for centrifugal spun ductile iron pipe with "push on" or bell and spigot type joints. Required glands, gaskets, bolts and nuts shall be furnished. Pipe shall be coated with bituminous coal tar base, approximately one mil thick. The nominal laying length of the pipe shall be 18 feet. The maximum allowable pipe deflection shall be three degrees per joint with a recommended deflection of two degrees or less per joint. Pipe deflection shall be limited to two degrees at crosses, valves, couplings, and fire hydrants. Except where specifically noted on the plans, ductile iron pipe shall have bell and spigot ends. Ductile iron pipe underground shall be protected against external corrosion by loose polyethylene sleeves in accordance with AWWA C-105.

(11) PVC Pressure Pipe. PVC Class 900 pipe shall meet the requirements of ASTM D-2241 except that the pipe shall have an outside diameter of ductile iron pipe sizes instead of iron pipe sizes. The PVC pipe shall meet the requirements of the AWWA C-900 with pressure clasp of 150 and the D.R. of not less than 18. At least 85 percent of the total footage shall be furnished in standard 20-foot lengths.

(12) Fittings. Fittings for PVC pipe shall be cast iron fittings as specified under cast iron and

ductile iron pipe, and be properly sized for the dimensions of the pipe being used. All fittings for joining pipe four inches in diameter and larger shall be of the push-on rubber gasket or mechanical joint type of fitting.

(13) Replacement of Damaged Material. Any material that becomes damaged shall be replaced by the subdivider at his own expense.

(14) Responsibility for Safe Storage. The subdivider shall be responsible for the safe storage of material furnished by or to him, and accepted by him, and intended for the work, until it has been incorporated in the completed project.

(15) Handling Pipe and Accessories. Pipe, fittings, valves, hydrants, and other accessories shall, at all times, be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists or slid, or rolled on skidways in such manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground. All pipe, fittings, valves and hydrants shall be carefully lowered into the trench piece by piece by means of derrick, ropes or other suitable tools or equipment, in such manner as to prevent damage to pipe or pipe coating. Under no circumstances shall pipe or accessories be dropped or dumped into the trench. Pipe shall be handled in such manner that a minimum amount of damage to the coating will result. Damaged coating shall be repaired in a manner satisfactory to the Engineer.

(16) Gate valves shall be iron body, bronze mounted, double disc with nonrising stems with design construction to AWWA C-500, and modifications herein. Stem seals shall be double O-ring seals; valves shall open counterclockwise. Provide two-inch square wrench nut for key operation. Operating valve nut shall be within six inches of finished surface grade. Install 24 inches of crushed rock from the bell top of the valve to the trench grade below the valve to provide proper drainage. Provide mechanical joint ends, except gate valves for use with fire hydrants.

(17) Valve boxes shall be buffalo type, sliding type with base as required for the valve size used and of sufficient length for the specified pipe bury. It shall have the word "water" stamped thereon.

(18) Locating wire and tape shall be provided and installed along PVC pipelines one foot directly above the pipe. The wire shall be 14 gauge 600 volt PVC jacketed wire manufactured for underground services. Wire shall terminate and be exposed in valve boxes as directed by the Public Works Department for easy access. Installation contractor shall install "culinary waterline buried below" tape if pipe color does not meet City requirements.

(B) Laying Pipe.

(1) General. All pipe shall be laid and maintained to the required lines and grades, with fittings, valves and hydrants at the required locations, and with joints centered and spigots home, and with all valve and hydrant stems plumb. No deviation shall be made from the required line or grade except with the written consent of the Engineer.

(2) Permissible Deflections at Joints. Wherever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane to avoid obstructions, to plumb stems, or where long radius curves are permitted, the degree of deflection shall be approved by the Engineer.

(3) Protecting Underground and Surface Structures. Temporary support, adequate protection and maintenance of all underground and surface utility structures, drains, sewers and other obstructions encountered in the progress of the work shall be furnished by the contractor at his own expense under the direction of the Engineer.

(4) Deviations Occasioned by Other Utility Structures. Wherever existing utility structures or branch connections leading to main sewers or to main drains, or other conduits, ducts, pipes, or structures present obstruction to the grade and alignment of the pipe, they shall be permanently supported, removed, relocated or reconstructed by the contractor through cooperation with the owner of the utility, structure or obstructure involved. In those instances where their relocation or reconstruction is impracticable, a deviation from line and grade will be ordered, and the change shall be made in the manner directed by the Engineer. Connections to private residences shall be cut and looped around the pipeline.

(5) Pipe Kept Clean. All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench,

and it shall be kept clean by approved means during and after laying.

(6) Bell Ends to Face Direction of Laying. Unless otherwise directed, pipe shall be laid with bell ends facing the direction of laying, and for lines on an appreciable slope, bells shall, at the discretion of the Engineer, face upgrade.

(7) Preventing Trench Water from Entering Pipe. At times when pipe laying is not in progress, the open ends of pipe shall be closed by approved means, and no trench water shall be permitted to enter the pipe.

(8) Cutting Pipe. Cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe.

(9) Pipe Jointing. Jointing of all pipe shall be as recommended by the manufacturer. All pipes shall be handled in such a way so as to prevent damage to the coating and lining. Refer to backfilling specifications for proper bedding and compaction. Thrust blocking shall be applied at all tees, plugs, caps and at bends deflecting 22.5 degrees or more. Prevention of concrete adhesion by means of 10 mil plastic sheeting to protect valves or pipe material shall be directed by the City Inspector.

(C) Setting Valve, Hydrant and Fitting.

(1) Valves. The contractor shall furnish all valves indicated on the plans as called for in these specifications or as called for proper operation of the water system. Valve manufacturer shall provide detailed information as required by the Engineer for evaluating the quality of the valve. The technical information shall include complete dimensions, weights and material lists. No valve will be approved for installation until the required information has been received and approved. Except as otherwise specified, all buried valves shall be painted with two coats of asphalt varnish in accordance with the requirements of AWWA C 500. Gate valves shall be iron body, resilient seat, nonrising stem conforming to AWWA C 509 with double O-ring. Valves shall open counter clockwise. Valve ends shall be flanged or mechanical joint as required for the type of pipe used. Maximum shutoff pressure shall be 200 psi.

(2) Location. Gate valves, hydrants and fittings shall be located as shown on the plans or as directed by the Engineer or Public Works Department Director.

(3) Valve Boxes and Valve Pits. Cast iron valve boxes shall be firmly supported, and maintained centered and plumb over the wrench nut of the gate valve, with box cover flush with the surface of the finished pavement or at such other levels as may be directed. The valve shall be supported by a concrete pressure block and surrounded with two feet in depth of coarse gravel around the base of the valve.

(4) Hydrants. Hydrants shall be located in a manner to provide complete accessibility, and in such a manner that the possibility of damage from vehicles or injury to pedestrians will be minimized. Maximum separation distance between fire hydrants shall not be greater than 500 feet. Unless otherwise directed, the setting of any hydrant shall conform to Items 4, 5, 6, and 7.

(5) Position of Nozzles. All hydrants shall stand plumb, and shall have their nozzles parallel with or at right angles to the curb, with the pumper nozzle pointing normal to the curb, except that hydrants having hose nozzles at an angle of 45 degrees shall be set normal to the curb. They shall conform to the established grade, with nozzles at least 12 inches above the ground.

(6) Drainage at Hydrant. A drainage pit two feet in diameter and two feet deep shall be excavated below each hydrant and filled compactly with coarse gravel or broken stone, mixed with coarse sand, under and around the bowl of the hydrant and to a level of six inches above the waste opening. No hydrant drainage pit shall be connected to a sewer.

(7) Anchorage for Hydrant. The bowl of each hydrant shall be well braced against unexcavated earth at the end of the trench with concrete backing, or it shall be tied to the pipe with suitable rods or clamps.

(8) Cleaning. Hydrants shall be thoroughly cleaned of dirt or foreign matter before setting.

(9) Plugging Dead Ends. Standard plugs shall be inserted into the bells of all dead ends of pipe, toes or crosses and spigot ends shall be capped.

(10) Anchorage of Toes, Tees, and Plugs. Reaction or thrust blocking shall be applied on all pipelines four inches in diameter or larger at all tees, plugs, caps and at bends deflecting 22.5 degrees or more, or movement shall be prevented by attaching suitable metal rods or straps as

directed by the Engineer. Thrust block size shall be determined by the subdivider's engineer and shall be shown on the plans.

(11) Material for Reaction Blocking. Reaction or thrust blocking shall be of concrete having compressive strength of not less than 2,000 psi. Blocking shall be placed between solid ground and the fitting to be anchored, the area of bearing on pipe and on ground in each instance shall be that required by the Engineer. The blocking shall be so placed that the pipe and fitting joints will be accessible for repair. The pipe shall be protected from the thrust block by a layer of 10 mil plastic.

(D) Hydrostatic Tests.

(1) Pressure During Test. After the pipe has been laid and partially backfilled, all newly laid pipe, or any valved section of it shall, unless otherwise specified, be subjected to maximum operating pressure.

(2) Duration of Pressure Test. The duration of each pressure test shall be at least 30 minutes at 220 psi.

(3) Procedure. Each valved section of pipe shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connections and all necessary apparatus shall be furnished by the contractor.

(4) Expelling Air Before Test. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, it necessary, at points of highest elevation, and afterward tightly plugged.

(E) Cleaning Water Mains. After chlorination, the mains shall be flushed thoroughly. Flushing shall be done after the pressure test is made. It must be understood that such flushing removes only the lighter solids and cannot be relied upon to remove heavy material allowed to get into the main during laying.

Unless extreme care and thorough inspection is practiced during the laying of water mains, small stones, pieces of concrete, particles of metal, or other foreign material may gain access to mains newly laid or repaired.

(F) Sterilizing Water Mains.

(1) General. Disinfection of water mains shall be done in accordance with "Procedure for Disinfecting Water Mains," AWWA C 601 68. The interior of all pipe, fittings and other accessories shall be kept as free as possible from dirt and foreign matter at all times.

(2) Chlorination.

(a) Form of Chlorine and Means of Application. Before being placed in service, all new water mains shall be chlorinated. If the available water is more alkaline than pH 8, the holding time in the main shall be increased at the discretion of the Engineer.

(b) Form of Applied Chlorine. Either of the following forms of chlorine may be used, subject to the approval of the Engineer:

(i) Liquid chlorine;

(ii) Calcium hypochlorite tablets.

(c) Methods of Chlorine Application.

(i) Continuous Feed Method. This method is suitable for general application.

Table 1

Chlorine Required to Produce 50 mg/l Concentration in 100 Feet of Pipe by Diameter

Pipe Size inches	100 Percent Chlorine pounds	1 Percent Chlorine Solutions gallons
4	0.027	0.33
6	0.061	0.73
8	0.108	1.30
10	0.170	2.04
12	0.240	2.88

Water from the existing distribution system or other approved sources of supply shall be made to flow at a constant, measured rate into the newly laid pipeline. The water shall receive a dose of chlorine, also fed at a constant, measured rate. The two rates shall be proportioned so that the concentration in the water in the pipe is maintained at a minimum of 50 mg/l available chlorine. To assure that this concentration is maintained, the chlorine residual should be measured at regular intervals in accordance with the procedures described in the current edition of Standard Methods and AWWA M 12 Simplified Procedures for Water Examination.

Table 1 gives the amount of chlorine residual required for each 100 feet of pipe of vari-

ous diameters. Solutions of one percent chlorine may be prepared with sodium hypochlorite or calcium hypochlorite. The latter solution requires approximately one pound of calcium hypochlorite in eight and one-half gallons of water.

During the application of the chlorine, valves shall be manipulated to prevent the treatment dosage from flowing back into the line supplying the water. Chlorine application shall not cease until the entire main is filled with the chlorine solution. The chlorinated water shall be retained in the main for at least 24 hours, during which time all valves and hydrants in the section treated shall be operated in order to disinfect the appurtenances. At the end of this 24 hour period, the treated water shall contain no less than 25 mg/l chlorine throughout the length of the main.

(ii) Tablet Method. Tablets are placed in each section of pipe and also in hydrants, hydrant branches, and other appurtenances. They shall be attached by an adhesive, except for the tablets placed in hydrants and in the joints between the pipe sections. All the tablets within the main must be at the top of the main. If the tablets are fastened before the pipe section is placed in the trench, their position should be marked on the section to assure that there will be no rotation. In placing tablets in joints, they are either crushed and placed on the inside annular space, or, if the type of assembly does not permit, they are rubbed like chalk on the butt ends of the sections to coat them with calcium hypochlorite.

The adhesive may be Permatex No. 1 or any alternative approved by the Engineer. There shall be no adhesive on the tablet except on the broad side next to the surface to which the tablet is attached.

(iii) Filling and Contact. When installation has been completed, the main shall be filled with water at a velocity of less than one foot/second. This water shall remain in the pipe for at least 24 hours.

Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water.

Table 2

Number of Hypochlorite Tablets Required for Dose of 50 mg/l*

Length of Section Feet	Diameter of Pipe Inches					
	2	4	6	8	10	12
13 or less	1	1	2	2	3	5
18	1	1	2	3	5	6
20	1	1	2	3	5	7
30	1	2	3	5	7	10
40	1	2	4	6	9	14

*Based on 3.75 grams available chlorine per tablet.

(iv) Preventive Measures During Construction. Precautions must be taken to protect pipe interiors, fittings, and valves against contamination. Pipe delivered for construction shall be strung so as to minimize entrance of foreign material. When pipe laying is not in progress, as for example at the close of the day's work, all openings in the pipeline shall be closed by watertight plugs. Joints of all pipe in the trench shall be completed before work is stopped. If water accumulates in the trench, the plugs shall remain in place until the trench is dry.

Note: Delay in placement of delivered pipe invites contamination. The more closely the rate of delivery is correlated to the rate of pipelaying, the less this delay.

If dirt that, in the opinion of the City Engineer or Inspector, will not be removed by the flushing operation enters the pipe, the interior of the pipe shall be cleaned and swabbed as necessary, with a five percent hypochlorite disinfecting solution.

(v) Preventing Reverse Flow. Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water.

(vi) Retention Period. Treated water shall be retained in the pipe long enough to destroy all non-spore forming bacteria. This period should be at least 24 hours and preferably longer, as may be directed. After the chlorine-treated water has been retained for the required time, the chlorine residual

at the pipe extremities and at other representative points should be at least 25 ppm.

(vii) Chlorinating Valves and Hydrants. In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.

(viii) Final Flushing and Test. Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipeline at its extremities until the replacement water throughout its length shall, upon test, be proved comparable to the quality of water served the public from the existing water supply system and approved by the public health authority having jurisdiction. This quality of water delivered by the new main should continue for a period of at least two full days as demonstrated by laboratory examination of samples taken from a tap located and installed in such a way as to prevent outside contamination. Samples should never be taken from an unsterilized hose or from a fire hydrant because such samples seldom meet current bacteriological standards.

(ix) Repetition of Procedure. Should the initial treatment fail to result in the conditions specified above, the chlorination process shall be repeated until such results are obtained. [Ord. 04-11; Code 1971 Appendix § 8.]

8.45.90 Sanitary sewers.

(A) Concrete Sewer Pipe.

(1) Description. Sanitary sewers shall include the performance of all operations necessary to lay sewer pipe mains, wye branches, individual sewer mains to manholes, test mains for leaks and all incidental work necessary to complete the work in a satisfactory manner.

(2) Sewer Pipe. All pipe for the sanitary sewer mains shall be bell and spigot. The type of pipe the contractor proposes to install shall have the approval of the City Engineer before work is commenced. No interchanging of type of pipe will be allowed.

(3) Nonreinforced Concrete Sewer Pipe. Nonreinforced concrete sewer pipe shall conform to Concrete Sewer Pipe ASTM Designation C-14-56.

(4) Reinforced Concrete Sewer Pipe. Reinforced concrete sewer pipe shall conform to the requirements for "Reinforced Concrete Sewer Pipe: ASTM Designation C-75556." Cement used in the pipe shall conform to Type 11A (the air entraining agent shall be interground at the mill), low alkali cement, conforming to Federal Specifications, 192a, of ASTM Designation C-15C-53.

(5) Length of Pipe. Pipe 36 inches in diameter and under shall be at least 36 inches long except specials. Pipe over 36 inches in diameter shall be at least as long as the inside diameter. The maximum length of pipe shall be 24 feet.

(6) Testing. Random samples of pipe and all fittings and specials such as short radius bands, wyes and toes shall be tested as specified for the type of pipe being used.

(7) Laying. No pipe shall be laid under any circumstances until the pipe has been tested, and the samples selected have satisfactorily passed the requirements. All pipe shall be laid upgrade from structure, unless otherwise expressly permitted by the Engineer, with the bell end of the pipe upgrade. All pipe shall be laid true to line and grade, with a uniform bearing under the full length of the barrel of the pipe, and suitable excavation shall be made to receive the bell of the pipe. All adjustments to grade shall be made by scraping away or tamping earth under the pipe. Wedging or blocking under the hub will not be permitted. As each unit of pipe is laid a sufficient amount of selected backfill materials shall be carefully placed and thoroughly tamped about the lower portion of the pipe to hold it firmly in position. If adjustment of the position of a length of pipe is required after it has been laid, it shall be removed and rejoined as for a new pipe. When laying is not in progress the ends of the pipelines shall be kept closed to prevent the entrance of foreign material.

(8) Rubber Gasket Joints. Pipe for rubber gasket joints shall be of the bell and spigot type, detail of the type the contractor proposes to use shall be furnished and must have the approval of the City Engineer before the work is to be commenced. The joint shall be so designed as to provide for self-centering and when assembled, to compress the gasket to form a watertight seal. The pipe design and gasket shall be such that movement of the pipe or hydrostatic pressure cannot displace the gasket. In order to assure watertightness the clearance between the inner surface of the bell and the outer surface of the spigot, as well as the dimensional tolerances of this annular space, shall

be such that the gasket residual deformation is neither less than 20 percent nor more than 45 percent when the spigot is seated to the full depth of the bell socket.

(9) Rubber Gaskets. The rubber gasket for use on pipe shall be cured in such a manner that any cross-section will be dense, homogeneous, and free from porosity and other imperfections. The gasket shall be extruded or molded to the specific size within a tolerance of plus or minus one-thirty-second of an inch at any cross-section of the gasket. The gasket shall be fabricated from a high-grade tread-type compound. The basic polymer shall be natural rubber, or a copolymer of butadiene-styrene synthetic. The compound shall contain no factice and shall have the following characteristics:

Tensile strength, pounds per square inch, minimum	2,300
Elongation at break, percent, minimum	425
Shore durometer (Type A)	40 to 60
Absorption of water, by weight, two days at 70 degrees Celsius, percent maximum	5
Compression set (constant deflection), percent of original deflection, maximum	20
Tensile strength after oxygen bomb aging (48 hours, 158 degrees Fahrenheit, 300 per square inch), percent of tensile strength before aging, minimum	80
Increase in shore durometer hardness after oxygen bomb aging, maximum increase over original shore durometer	8
Acetone, extract, percent, maximum	15

The physical properties of the rubber compound shall be determined by tests performed in accordance with the appropriate section of Federal Specifications ZZ-R-601a, except for shore durometer and compression set. All tests for compression set shall be made in accordance with Method B, ASTM Designation D-395 for compression set of vulcanized rubber under constant deflection. Tests for shore durometer shall be made in accordance with ASTM Designation D-676. The contractor shall furnish certified copies of test reports as evidence of the rubber compound used in all rubber gaskets before any gaskets are used to join pipes. All rubber shall be stored in as cool a place as practicable, preferably at 70 degrees or less, and in no case shall the rubber for joints be stored exposed to the direct rays of the sun. All rubber gaskets shall be stored so as to permit free circulation of air about the rubber.

In all cases during the laying of the pipe extreme care must be taken to see that the rubber gaskets are properly fitted in place and at all times are free from twisting and unusual displacement.

(B) Poly (VinylChloride) Sewer Pipe (PVC).

(1) General. This specification covers requirements for PVC pipe and fittings to be furnished for sanitary sewer.

Pipe and fittings produced to the standards below should be installed in accordance with ASTM recommended practice D-2321, underground installation of flexible thermoplastic sewer pipe. The plastics nomenclature used in the specifications is in accordance with the definitions given in nomenclature D-883, unless otherwise indicated.

(2) Applicable Documents. PVC sewer pipe furnished under this specification shall meet the following ASTM standards: D-256, Impact Strength; D-638, Tensile Strength and Modulus of Elasticity; D-648, Deflection Temperature under Load of 264 psi; D-1784, Specifications for Rigid Poly (VinylChloride) Compounds and Chlorinated Poly (VinylChloride) Compounds; D-3034 (SDR 35) Type PSP Poly (VinylChloride) (PVC) Sewer Pipe and Fittings. The requirements of this specification are intended to provide pipe fittings suitable for nonpressure drainage of sewage.

(3) Materials. Basic materials of the pipe and fittings shall be PVC plastic having a self-classification of 12454-B and shall meet the minimum physical properties and chemical resistance of the PVC compound as defined in ASTM D-1784.

(4) Connection Joints. All sizes and classifications of PVC gravity sewer pipe shall have joints utilizing rubber gaskets for sealing. Gaskets shall meet specifications defined in ASTM D-2000-AA820, ASTM 2000-AA625 and ASTM D-1869.

(5) Workmanship. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects. The pipe shall be as uniform as commer-

cially practical in color, density, and other physical properties.

(6) Requirements. All materials, dimensions, strengths, qualities, and test requirements shall meet the applicable ASTM requirements. All material used shall be new and shall be protected from any long exposure to the sun.

(7) Inspections. Inspection of the material shall be made as agreed upon by the purchaser and the seller as part of the purchase contract.

(8) Certification. When agreed upon in writing by the purchaser and the seller the certification shall be made the basis of the acceptance of the material. This shall consist of a copy of the manufacturer's test report or a statement by the seller, accompanied by a copy of the test results, that the material has been sampled, tested, and inspected in accordance with the provisions of the specification. Each certification so furnished shall be signed by an authorized agent of the seller or manufacturer. Copies will be furnished to the City.

(9) Marking. Pipes in compliance with this standard shall be clearly marked at intervals of five feet or less. The marking on SDR 35 shall be:

(a) Manufacturer's quality;

(b) Nominal pipe size;

(c) PVC 12454-B;

(d) SDR (Number);

(e) PSP sewer pipe;

(f) Appropriate ASTM number;

(g) Extrusion code.

(C) Sewer Appurtenances.

(1) Testing of Gravity Sewer Lines. Gravity sewer lines shall show not more than 200 gallons infiltration per day, per mile of pipe, per inch nominal diameter. In areas where the ground water level is above the top of the pipe for the entire length of the sewer being tested, the infiltration shall be measured into the pipe to determine if it meets infiltration requirements. In areas where the ground water level is below the top of the pipe the contractor shall perform an exfiltration or leakage test to provide the City an indication of the condition of the completed system. After capping and blocking all wyes or tees, the pipe between successive manholes shall be filled with water, including the upstream manholes, to not less than four feet nor more than eight feet above the lowest point of the sewer section being tested. The amount of water level shall be measured, and it shall not exceed a rate of 200 gallons exfiltration per day, per mile of pipe, per inch nominal diameter. Any one individual section may exceed the rate by one and one-half times if the total length does not exceed the above rate. The program of testing must be mutually determined by the Engineer and the contractor. The contractor shall furnish all labor, tools, and equipment necessary to make the tests and to perform any work incidental thereto. The contractor shall take all necessary precautions to prevent any joints from separating, or other damage to the system while the pipelines or their appurtenances are being tested. He shall, at his own expense, correct any excess leakage and repair any damage to the pipe and its appurtenances or to any structures indicated by or resulting from these tests. If any section tested fails the test, it shall be repaired or replaced and retested at the contractor's expense, until the measured leakage is within the allowable limits. Prior to the issuance of building permits and preceding the final warranty release of contingency improvement funding the City will require the developer or his selected contractor to perform a flush cleaning and CCTV video inspection of the sanitary sewer pipes to confirm pipe workmanship and perpetuation of City and American Society of Testing and Materials (ASTM) design and construction requirements. The City may require follow-up video inspections to confirm necessary repairs have been completed from previous inspections.

(2) Deflection and Air Testing of Sewer Lines. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of five pounds per square inch (34.5 kPa) or sufficient to balance a column of mercury 10 inches (254 mm) in height. The pressure shall be held without introducing additional air for a period of at least 15 minutes. In addition to the air test of the sewer line, a deflection test will also be required. The deflection test shall be made by positioning a multisize and stationary type deflection test gauge within a standard flexible sewer pipe. Each multisize gauge utilized for testing shall be five percent smaller in diameter than the inner walls of the pipe to be tested. The gauge will be placed within the sewer pipe and then vac-

uum pulled from one manhole to the next to locate any deflection problems.

(3) Wye Branches. Wye branches or junctions for house connections shall be four inches in diameter, and shall be installed in the sewer at such locations as the Engineer may direct. Wye branches shall be elevated so that the flow line of the wye is level with the centerline of the pipe. Each wye, not used in connecting present laterals, shall be sealed by means of a suitable plug of the same material as the pipe and sealed with joint compound one-fourth inch deep over the plug.

(4) Manholes.

(a) General. This item shall consist of the construction or installation of concrete manholes of the various types and diameters shown on the plans and at the designated locations. The item shall include: ring and cover, steps, and all other incidentals necessary to fully complete the manholes.

(b) Precast Manholes. Precast manholes shall consist of sections of rings of tongue and grooved reinforced concrete pipe on a cast in place foundation. Both circular and conical sections shall meet the requirements of "Reinforced Concrete Sewer Pipe (ASTM Specifications C-75)."

Approved eccentric manholes with rungs will be accepted. Concentric manholes will not be accepted.

The precast base section shall be recessed on the bottom edge to receive the pipe entering the manhole. The base section shall extend at least two inches into the concrete of the floor. When practical the base section shall be set in position before the floor is poured; in any case the base section shall be imbedded in the floor before the concrete has taken its initial set.

Joints between sections shall be set in: (i) cement grout; or (ii) asphaltic sewer joint compound. Joints shall be watertight.

(c) Manhole Covers. The contractor will furnish and install the cast iron frame and cover shown on the plans as a part of the manhole.

(d) Castings, Quality of Metal. All castings shall be made of good quality cast iron, strong, tough, straight-grained and free from flaws, cracks, blow holes or other defects and of exact form and dimensions shown on the plans. They shall be evenly and firmly set and imbedded as to afford the chance of any movement. The seats and bearings of all frames and covers shall be machine faced and shall fit evenly and firmly and so made as to be interchangeable. Iron shall conform to "Standard Specifications for Gray Iron Castings" ASTM Specification A-48-48 or Class 30.

(e) Grade. Necessary adjustment to bring the cover to finished street grade shall be required.

(f) Manhole Ladders. Manhole ladder steps as shown on manhole plans shall be formed from three-fourths inch mild steel bar coated with polyethylene or cast iron rungs.

(g) Stubs in Manholes. Stubs in manholes shall be flexible rubber boots with stainless steel straps.

(h) Revisions to Existing Manholes. All work required to revise or modify existing manholes, in connection with this project, as shown on the plans, or as directed by the Engineer, necessary to complete the project shall be done by the contractor and no extra compensation shall be allowed for this work. This work shall include such incidentals as raising manhole floors, providing drop type inverts, new invert openings, etc.

(5) Service Lines. Any sewer laterals that may be extended beyond the branch in the main by the contractor during the construction shall be subject to all the requirements of these specifications for the construction of the main line sewer. Cementing of joints will be allowed.

The contractor shall be fully responsible for any leaks in the sewer laterals, to the same extent as if such leaks were in the sewer main.

Sewer service lines shall be connected into the main line with a tee or other fitting manufactured for this purpose. The lateral shall be placed on a two percent slope and shall have cleanouts every 50 feet, at all changes in direction greater than 45 degrees and at drop connections. In the event the main sewer is deeper than required to connect the service line at two percent slope, the service line shall be taken off on a 45 degree angle and then flattened to the minimum slope to the house or user. Service lines for residential connections shall be four inch. The service line will be installed in the upper half of the main line.

(6) Workmanship. The contractor, developer, home builder or others responsible for the work shall provide adequate means, acceptable to the City Inspector, to prevent the entrance of for-

eign materials into the sewer lines via the manholes and service laterals.

Unless otherwise approved the following means of protection shall be used:

Before work is started on street grading and paving jobs where there is a possibility of manhole rings and covers being displaced by equipment, the floor of the manhole shall be completely covered with wood planks, adequately secured to prevent displacement. Individual planks shall have a width greater than the diameter of the sewer pipe. Planking shall remain in place during the life of the job. Upon completion of the work any foreign material that may have entered the manhole shall be removed before the planking is removed.

On resurfacing jobs where it is required that manhole covers be adjusted to new grade, a canvas apron, properly supported or anchored, may be used in lieu of wood planking. In every case such apron or planking shall be in place before the work is started and shall not be removed until the work of adjusting the manhole has been completed.

(7) Final Sewer Cleaning and Inspection. Prior to final acceptance, all parts of the system shall be completely finished and cleaned by the developer. All accumulated construction debris, rocks, gravel, and other foreign material shall be removed from the sewer system at or near the closest downstream manhole. If necessary the contractor shall use mechanical rodding or bucketing equipment. The City Public Works Department shall complete a smoke test of the system to locate cross connections, illegal connections and infiltration points. The City shall notice the home builder or developer of any illegal connections to the sewer system. The home builder shall undertake correction of cross connections, illegal connections, or infiltrations. This shall include cleaning of the cross connected service pipeline acceptable to the City Public Works Department. [Ord. 04-23; Ord. 04-11; Code 1971 Appendix § 9.]

8.45.100 Storm sewers.

(A) Storm Drain Calculations.

(1) Storm drain calculations will be produced using the rational method.

(2) Storm drain design shall follow the 0.2 C.F.S. discharge allowable by Davis County and shall be sized for a 10-year storm without detention, a 50-year storm with minor detention, and a 100-year storm with major detention.

(3) Hydraulic calculations shall be submitted which produce the Composite "C."

(4) Submit copies of the storm intensity/frequency.

(B) Culvert Pipe and Incidental Construction.

(1) Material. All pipe required for the storm sewer shall be standard strength, tongue and groove, reinforced concrete culvert pipe. All culvert pipe shall conform to the American Society for Testing Materials Specifications for Reinforced Concrete Culvert Pipe, latest Designation D-76, or as provided in the special provisions.

Pipe diameters listed in the bid schedule for which no reinforcing requirements have been determined under ASTM specifications shall be reinforced as required for the next diameter larger.

(2) Length of Pipe. Culvert pipe from 10 inches in diameter to 36 inches in diameter shall be at least 36 inches long. Pipe over 36 inches in diameter shall be at least as long as the inside diameter.

(3) Testing of Pipe. Every manufacturer furnishing pipe under these specifications shall furnish all facilities necessary to carry out the tests required in these specifications.

(4) Line and Grade. Line and grade shall be accurately maintained. Laser method is preferred.

(5) Method of Laying Pipe. The first pipe downstream shall be bedded to established line and grade with the groove upstream. A shallow excavation shall be made underneath the pipe at the joint, this space to be filled with mortar, into which the end of the second pipe beds when laid. The groove end of the first pipe must be thoroughly cleaned with a wet brush and a layer of soft mortar applied to the inside of the groove. The tongue end of the second pipe must be thoroughly cleaned with a wet brush and while in a horizontal position a layer of soft mortar is then inserted into the groove end of the first pipe until the mortar is squeezed out on the interior and exterior surfaces. The interior surface of the pipe joint over 18 inches in diameter shall be brushed smooth and under 18 inches in diameter wiped smooth.

All concrete culvert pipe shall have gasket joints, which operation shall be carried on several joints behind the laying operation. The outer surface of the pipe must be thoroughly cleaned with a

wet brush. As the band is carried up around the lower half of the pipe, an earth support is provided to prevent its falling off. At a point somewhat below spring line of the pipe, this operation may be discontinued. The band on the upper half of the pipe requires no support. Bands shall be at least one-half the thickness of the shell of the pipe and for four inches to six inches wide.

(6) Rubber Gasket Joints. Gaskets shall conform to ASTM D-412.

(C) Structures.

(1) Definition. All items listed in the bidding schedule as cleanout boxes, inlet boxes and junction boxes shall be designated as structures.

(2) Concrete. Concrete for all structures shall be as outlined in SCC 8.45.030.

(3) Finishing. Upon removal of the forms, all the tie wire holding the forms shall be cut flush with concrete face and any rough or irregular surfaces found to exist shall immediately be repaired to the satisfaction of the Engineer. Surface not exposed to view need not be finished, unless otherwise shown on the plans. Unless otherwise shown on the plans, exposed surfaces of structures shall be finished to conform to the finish of the adjacent concrete. Surfaces over which asphalt paving is to be placed shall be rodded off to the neat lines. Surfaces exposed in concrete paving shall be given a float finish and surfaces exposed in curb and gutter areas shall be finished as prescribed for curb and gutter. An edging tool shall be used on all exposed corners to properly shape and finish the concrete.

(D) Waterways.

(1) Description. Waterways shall include the construction of box culverts and flumes, the finishing and placing of concrete and metal pipe culverts and other types of culverts specified, in street sections, or in ditches paralleling streets, the construction of cleanout boxes and the furnishing and placing of cleanout frames and covers, and the construction of head gates and diversion works and all other work incidental thereto, in accordance with the plans and these specifications.

(2) Concrete Box Culverts, Flumes and Cleanout Boxes, Etc. Concrete waterways shall be constructed from concrete, to the dimensions and at the locations shown on the plans, or according to the stakes set by the Engineer. The provisions of SCC 8.45.030, Portland cement concrete, shall apply to the construction of waterways. Concrete waterways shall be reinforced as shown on the plans.

(3) Reinforced Concrete Pipe. Reinforced concrete pipe shall meet the requirements of "Standard Specifications for Reinforced Concrete Culvert Pipe ASTM Designation C-76. (Latest ASTM Designation C-76.)"

(4) Plain concrete pipe shall not be used.

(5) Corrugated Metal Pipe (CMP). Corrugated metal pipe in quality and sizing shall be in compliance with the regulations and design criteria in "Handbook of Steel Drainage and Highway Construction Products," published by the American Iron and Steel Institute, or as specified on an approved set of plans and shall meet the requirements of AASHTO Specification M-36.

(6) Placing and Covering. Pipe shall be placed at the locations shown on the plans or as directed by the Engineer and shall be laid true to line and grade. The width of the trench in which the pipe is laid shall be sufficient to permit thorough tamping under the haunches of the pipe. The pipe shall be bedded in an earth foundation of uniform density, and carefully shaped to the proper grade. Where rocks or boulders are encountered in the formation it shall be removed and replaced with granular material to a sufficient depth to provide a uniform cushion under the pipe.

Where a firm foundation is not encountered at the established grade due to spongy or unstable soil, additional excavation shall be made as directed by the Engineer, and backfilled with suitable material adequately compacted to form a firm foundation for the pipe.

Select material free from rocks and clods shall be used for backfill and shall be placed in layers not exceeding six inches in thickness and thoroughly compacted by tamping to the finished grade of the street.

(7) Cleanout Frames and Covers. Cleanout frames and covers shall be furnished and installed at the various locations shown on the plans, or as may be directed by the Engineer.

(8) Final Cleaning. Prior to final acceptance, all parts of the storm drain system shall be completely finished and cleaned by the developer. All accumulated construction debris, rocks, gravel, and other foreign material shall be removed from the storm drain system at or near the closest downstream manhole or cleanout structure. If necessary

the contractor shall use mechanical rodding or bucketing equipment.

(E) Detention Facilities. Detention facilities shall meter water at 0.2 cfs per acre. Detention facilities shall be designed as follows:

(1) Side slopes shall be 3:1 maximum.

(2) Designed for 50-year storm or as determined by City Engineer.

(3) Vehicular maintenance access around the entire basin (minimum 10-foot width).

(4) Vehicular access to basin.

(5) Where possible, lot shall provide normal frontage requirements.

(6) Pressurized irrigation system and landscaping compatible with the surrounding area.

(7) Flow-through design that eliminates a "wet basin."

(8) Cross slope within basin shall provide adequate drainage.

(9) Inlet and outlet boxes shall be grated, with extended swale construction extending from outlet structure into the basin to eliminate nuisance flows and water accumulation.

(10) Where possible, detention basins shall be incorporated into useable park property. [Ord. 04-11; Code 1971 Appendix § 10.]

8.45.110 Land drains.

(A) Concrete Pipe.

(1) Description. Land drains shall include the performance of all operations necessary to lay land drain pipe mains, wye branches, individual land drain mains to manholes, test mains for leaks and all incidental work necessary to complete the work in a satisfactory manner.

(2) Pipe. All pipe for the land drain mains shall be bell and spigot. The type of pipe the contractor proposes to install shall have the approval of the City Engineer before work commences. No interchanging of type of pipe will be allowed.

(3) Nonreinforced Concrete Pipe. Nonreinforced concrete land drain pipe shall conform to Concrete Pipe ASTM Designation C-14-56.

(4) Reinforced Concrete Pipe. Reinforced concrete land drain pipe shall conform to the requirements for "Reinforced Concrete Pipe: ASTM Designation C-75556." Cement used in the pipe shall conform to Type 11A (the air entraining agent shall be interground at the mill), low alkali cement, conforming to Federal Specifications, 192a, of ASTM Designation C-15C-53.

(5) Length of Pipe. Pipe 36 inches in diameter and under shall be at least 36 inches long except specials. Pipe over 36 inches in diameter shall be at least as long as the inside diameter. The maximum length of pipe shall be 24 feet.

(6) Testing. Random samples of pipe and all fittings and specials such as short radius bands, wyes and toes shall be tested as specified for the type of pipe being used.

(7) Laying. No pipe shall be laid under any circumstances until the pipe has been tested, and the samples selected have satisfactorily passed the requirements. All pipe shall be laid upgrade from structure, unless otherwise expressly permitted by the Engineer, with the bell end of the pipe upgrade. All pipe shall be laid true to line and grade, with a uniform bearing under the full length of the barrel of the pipe, and suitable excavation shall be made to receive the bell of the pipe. All adjustments to grade shall be made by scraping away or tamping earth under the pipe. Wedging or blocking under the hub will not be permitted. As each unit of pipe is laid a sufficient amount of selected backfill materials shall be carefully placed and thoroughly tamped around the lower portion of the pipe to hold it firmly in position. If adjustment of the position of a length of pipe is required after it has been laid, it shall be removed and rejoined as for a new pipe. When laying is not in progress the ends of the pipelines shall be kept closed to prevent the entrance of foreign material.

(8) Rubber Gasket Joints. Pipe for rubber gasket joints shall be of the bell and spigot type, detail of the type the contractor proposes to use shall be furnished and must have the approval of the City Engineer before the work is to be commenced. The joint shall be so designed as to provide for self-centering and when assembled, to compress the gasket to form a watertight seal. The pipe design and gasket shall be such that movement of the pipe or hydrostatic pressure cannot displace the gasket. In order to assure watertightness the clearance between the inner surface of the bell and the outer surface of the spigot, as well as the dimensional tolerances of this annular space, shall be such that the gasket residual deformation is neither less than 20 percent nor more than 45 percent

when the spigot is seated to the full depth of the bell socket.

(9) Rubber Gaskets. The rubber gasket for use on pipe shall be cured in such a manner that any cross-section will be dense, homogeneous, and free from porosity and other imperfections. The gasket shall be extruded or molded to the specific size within a tolerance of plus or minus one thirty-second of an inch at any cross-section of the gasket. The gasket shall be fabricated from a high-grade tread-type compound. The basic polymer shall be natural rubber, or a copolymer of butadiene-styrene synthetic. The compound shall contain no factice and shall have the following characteristics:

Tensile strength, pounds per square inch, minimum	2,300
Elongation at break, percent, minimum	425
Shore durometer (Type A)	40 to 60
Absorption of water, by weight, two days at 70 degrees Celsius, percent maximum	5
Compression set (constant deflection), percent of original deflection, maximum	20
Tensile strength after oxygen bomb aging (48 hours, 158 degrees Fahrenheit, 300 per square inch), percent of tensile strength before aging, minimum	80
Increase in shore durometer hardness after oxygen bomb aging, maximum increase over original shore durometer	8
Acetone, extract, percent, maximum	15

The physical properties of the rubber compound shall be determined by tests performed in accordance with appropriate sections of Federal Specifications ZZ-R-601a, except for shore durometer and compression set. All tests for compression set shall be made in accordance with method B, ASTM Designation D-395 for compression set of vulcanized rubber under constant deflection. Tests for shore durometer shall be made in accordance with ASTM Designation D-767. The contractor shall furnish certified copies of test reports as evidence of the rubber compound used in all rubber gaskets before any gaskets are used to join pipes. All rubber shall be stored in as cool a place as practicable, preferably at 70 degrees or less, and in no case shall the rubber for joints be stored exposed to the direct rays of the sun. All rubber gaskets shall be stored so as to permit free circulation of air about the rubber.

In all cases during the laying of the pipe extreme care must be taken to ensure that the rubber gaskets are properly fitted in place and continually free from twisting and unusual displacement.

(B) Poly (VinylChloride) Pipe (PVC).

(1) General. This specification covers requirements for PVC pipe and fittings to be furnished for land drains.

Pipe and fittings produced to the standards below should be installed in accordance with ASTM recommended practice D-2321, underground installation of flexible thermoplastic land drain pipe. The plastics nomenclature used in the specifications is in accordance with the definitions given in nomenclature D-883, unless otherwise indicated.

(2) Applicable Documents. PVC land drain pipe furnished under this specification shall meet the following ASTM standards: D-256, Impact Strength; D-638, Tensile Strength and Modulus of Elasticity; D-648, Deflection Temperature under Load of 264 psi; D-1784, Specifications for Rigid Poly (VinylChloride) Compounds and Chlorinated Poly (VinylChloride) Compounds; D-3034 (SDR 35) Type PSP Poly (VinylChloride) (PVC) Land Drain Pipe and Fittings. The requirements of this specification are intended to provide pipe fittings suitable for nonpressure drainage of sewage.

(3) Materials. Basic materials of the pipe and fittings shall be PVC plastic having a self-classification of 12454-B and shall meet the minimum physical properties and chemical resistance of the PVC compound as defined in ASTM D-1784.

(4) Connection Joints. All sizes and classifications of PVC gravity land drain pipe shall have joints utilizing rubber gaskets for sealing. Gaskets shall meet specifications defined in ASTM D-2000-AA820, ASTM 2000-AA625 and ASTM D-1869.

(5) Workmanship. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects. The pipe shall be as uniform as commer-

cially practical in color, density, and other physical properties.

(6) Requirements. All materials, dimensions, strengths, qualities, and test requirements shall meet the applicable ASTM requirements. All material used shall be new and shall be protected from any long exposure to the sun.

(7) Inspections. Inspection of the material shall be made as agreed upon by the purchaser and the seller as part of the purchase contract.

(8) Certification. When agreed upon in writing by the purchaser and the seller the certification shall be made the basis of the acceptance of the material. This shall consist of a copy of the manufacturer's test report or a statement by the seller, accompanied by a copy of the test results, that the material has been sampled, tested, and inspected in accordance with the provisions of the specification. Each certification so furnished shall be signed by an authorized agent of the seller or manufacturer. Copies will be furnished to the City.

(9) Marking. Pipes in compliance with this standard shall be clearly marked at intervals of five feet or less. The marking on SDR 35 shall be:

(a) Manufacturer's quality;

(b) Nominal pipe size;

(c) PVC 12454-B;

(d) SDR (number);

(e) PSP pipe;

(f) Appropriate ASTM number;

(g) Extrusion code.

(C) Land Drain Appurtenances.

(1) Testing of Gravity Lines. Gravity land drain lines shall show not more than 200 gallons infiltration per day, per mile of pipe, per inch nominal diameter. In areas where the ground water level is above the top of the pipe for the entire length of the land drain being tested, the infiltration shall be measured into the pipe to determine if it meets infiltration requirements. In areas where the ground water level is below the top of the pipe the contractor shall perform an exfiltration or leakage test to provide the City with an indication of the condition of the completed system. After capping and blocking all wyes or tees, the pipe between successive manholes shall be filled with water, including the upstream manholes, to not less than four feet nor more than eight feet above the lowest point of the land drain section being tested. The amount of water added during the test period from the section under test to maintain the water level shall be measured, and it shall not exceed a rate of 200 gallons exfiltration per day, per mile of pipe, per inch nominal diameter. Any one individual section may exceed the rate by one and one-half times if the total length does not exceed the above rate. The program of testing must be mutually determined by the Engineer and the contractor. The contractor shall furnish all labor, tools and equipment necessary to make the tests and to perform any work incidental thereto. The contractor shall take all necessary precautions to prevent any joints from separating or other damage to the system while the pipelines or their appurtenances are being tested. The contractor shall, at his own expense, correct any excess leakage and repair any damage to the pipe and its appurtenances, or to any structures indicated by or resulting from these tests. If any section of pipe fails the test, it shall be repaired or replaced and retested at the contractor's expense, until the measured leakage is within the allowable units.

(2) Air Testing of Lines. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of five pounds per square inch (34.5 kPa) or sufficient to balance a column of mercury 10 inches (254 mm) in height. The pressure shall be held without introducing additional air for a period of at least 15 minutes.

(3) Wye Branches. Wye branches or junctions for house connections shall be four inches in diameter, and shall be installed in the land drains at such locations as the Engineer may direct. Wye branches shall be elevated so that the flow line of the wye is level with the centerline of the pipe. Each wye, not used in connecting present laterals, shall be sealed by means of a suitable plug of the same material as the pipe and sealed with joint compound one-fourth-inch deep over the plug.

(4) Manholes.

(a) General. This item shall consist of the construction or installation of concrete manholes of the various types and diameters shown on the plans and at the designated locations. The item shall include: ring and cover, steps, and all other incidentals necessary to fully complete the manholes.

(b) Precast Manholes. Precast manholes shall consist of sections of rings of tongue and grooved reinforced concrete pipe on a cast in place foundation. Both circular and conical sections shall meet the requirements of "Reinforced Concrete Pipe (ASTM Specification C-75)."

Approved eccentric manholes with rungs will be accepted. Concentric manholes will not be accepted.

The precast base section shall be recessed on the bottom edge to receive the pipe entering the manhole. The base section shall extend at least two inches into the concrete of the floor. When practical the base section shall be set in position before the floor is poured; in any case the base section shall be imbedded in the floor before the concrete has taken its initial set.

Joints between sections shall be set in: (i) cement grout; or (ii) asphaltic land drain joint compound. Joints shall be watertight.

(c) Manhole Covers. The contractor will furnish and install the cast iron frame and cover shown on the plans as part of the manhole.

(d) Castings, Quality of Metal. All castings shall be made of good quality cast iron, strong, tough, straight grained and free from flaws, cracks, blow holes or other defects and of exact form and dimensions shown on the plans. They shall be evenly and firmly set and imbedded as to afford the chance of any movement. The seats and bearings of all frames and covers shall be machine faced and shall fit evenly and firmly and so made as to be interchangeable. Iron shall conform to "Standard Specifications for Gray Iron Castings" ASTM Specification A-48-48 or Class 30.

(e) Grade. Necessary adjustment to bring the cover to finished street grade shall be required.

(f) Manhole Ladders. Manhole ladder steps as shown on manhole plans shall be formed from three-fourths inch mild steel bar, coated with polyethylene or cast iron rungs.

(g) Stubs in Manholes. Stubs shall be flexible rubber boots with stainless steel straps.

(h) Revisions to Existing Manholes. All work required to revise or modify existing manholes, in connection with the project, as shown on the plans, or as directed by the Engineer, necessary to complete the project shall be done by the contractor and no extra compensation shall be allowed for this work. This work shall include such incidentals as raising manhole floors, providing drop type inverts, new invert openings, etc.

(5) Service Lines. Any land drain laterals that may be extended beyond the branch in the main by the contractor during construction shall be subject to all the requirements of these specifications for the construction of the main line land drains. Cementing of joints will be allowed.

All service lines shall be white in color, stubbed 10 feet beyond the property line, tagged and labeled "Land Drain," capped or plugged with a two-inch by four-inch clearly marking the location of the lateral stub.

The contractor shall be fully responsible for any leaks in the land drain laterals to the same extent as if such leaks were in the land drain mains.

Service lines shall be connected into the main line with a tee or other fitting manufactured for this purpose. The lateral shall be placed on a two percent slope and shall have cleanouts every 50 feet, or at all changes in direction greater than 45 percent and at drop connections. In the event the main land drain is deeper than required to connect the service line at a two percent slope, the service line shall be taken from a 45 degree angle and then flattened to the minimum slope to the house or user. Service lines for residential connections shall be four inch. The service line will be installed in the upper half of the main line.

Roof drainage structures, storm gutters, or other aboveground collection points are prohibited from connecting to or discharging storm water into City underground land drains or field drain main service lines.

New residential dwellings constructed within subdivisions containing a land drain system are required to make connection via a service lateral stubbed to the dwelling foundation footing and connected to the main land drain line owned by the City.

(6) Workmanship. The contractor or others responsible for the work shall provide adequate means, acceptable to the City Inspector, to prevent the entrance of foreign materials into the land drain lines via the manholes.

Unless otherwise approved the following means of protection shall be used:

(a) Before work is started on street grading and paving jobs where there is a possibility of manhole rings and covers being displaced by

equipment, the floor of the manhole shall be completely covered with wood planks, adequately secured to prevent displacement. Individual planks shall have a width greater than the diameter of the land drain pipe. Planking shall remain in place during the life of the job. Upon completion of the work any foreign material that may have entered the manhole shall be removed before the planking is removed.

(b) On resurfacing jobs where it is required that manhole covers be adjusted to a new grade, a canvas apron, properly supported or anchored, may be used in lieu of wood planking. In every case such apron or planking shall be in place before the work is started and shall not be removed until the work of adjusting the manhole has been completed.

(c) Permanent fiberglass catches under land drain lids shall be installed to prevent gravel and dirt from getting into the system.

(7) Final Cleaning. Prior to final acceptance, all parts of the system shall be completely finished and cleaned by the developer. All accumulated construction debris, rocks, gravel, and other foreign material shall be removed from the land drain system at or near the closest downstream manhole. If necessary the contractor shall use mechanical rodding or bucketing equipment. [Ord. 04-11; Code 1971 Appendix § 11.]

8.45.120 Secondary water.

(A) Materials.

(1) Flanged Fittings. All flanged fittings shall be in accordance with the current AWWA Specification C-110 for cast iron fittings.

(2) Dresser Couplings. Latest standard style with rubber gasket for water. For diameters four inches to 14 inches middle ring to be a minimum of one-fourth inch thick and five inches long with four and five-eighths inch bolts for four inch diameters; six and five-eighths inch bolts for six and eight inch diameters and eight and five-eighths inch bolts for 10-, 12-, and 14 inch diameters.

(3) Steel Pipe. Steel pipe shall conform to the current AWWA Specification C-201.

(4) Certification of all tests required by the American Water Works Association shall be provided by the manufacturer. The three-edge bearing test will be required, upon request of the Inspector.

(5) All pipe shall be standard lengths except for making connections to valves, fittings, and other such closures.

(6) PVC Pressure Pipe. Pipe shall be standard dimension ration pressure rated PVC pipe (SDR-RP-PVC) conforming to the latest revision of ASTM D-2241 and the National Bureau of Standards Product Standard PS 22-70. The pipe shall be PVC Class 900 pipe and shall meet the requirements of ASTM D-2241 except that the pipe shall have an outside diameter of ductile iron pipe sizes instead of iron pipe sizes. The PVC pipe shall meet the requirements of the AWWA C-900 with pressure clasp of 150 and the D.R. of not less than 18. Pipe shall be bell and spigot, twin gasket. At least 85 percent of the total footage shall be furnished in standard 20-foot lengths.

(7) Replacement of Damaged Material. Any material that becomes damaged shall be replaced by the subdivider at his own expense.

(8) Responsibility for Safe Storage. The subdivider shall be responsible for the safe storage of material furnished by or to him, and accepted by him, and intended for the work, until it has been incorporated in the completed project.

(9) Handling Pipe and Accessories. Pipe, fittings, valves, hydrants, and other accessories shall, at all times, be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists or slid, or rolled on skidways in such manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground. All pipe, fittings, and valves shall be carefully lowered into the trench piece by piece by means of derrick, ropes or other suitable tools or equipment, in such manner as to prevent damage to pipe or pipe coating. Under no circumstances shall pipe or accessories be dropped or dumped into the trench. Pipe shall be handled in such manner that a minimum amount of damage to the coating will result. Damaged coating shall be repaired in a manner satisfactory to the Inspector.

(10) Gate valves shall be iron body, bronze mounted, double disc with nonrising stems with design construction to AWWA C-500, and modifications herein. Stem seals shall be double O-ring seals; valves shall open counterclockwise. Install 24 inches of crushed rock from the bell top of the valve to the trench grade below the valve to pro-

vide proper drainage. Provide two inch square wrench nut for key operation. Operating valve nut shall be within six inches of finished surface grade. Provide mechanical joint ends.

(11) Valve boxes shall be buffalo type, sliding type with base as required for the valve size used and of sufficient length for the specified pipe bury. It shall have the word "sprinkler" or "irrigation" stamped thereon.

(B) Laying Pipe.

(1) General. All pipe shall be laid and maintained to the required lines and grades, with fittings and valves at the required locations. No deviation shall be made from the required line or grade except with the written consent of the Engineer. The contractor will install indicator tape marked "Irrigation Line Buried Below" 12 inches above the top of the irrigation pipe.

(2) Permissible Deflections at Joints. Wherever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane to avoid obstructions, to plumb stems, or where long radius curves are permitted, the degree of deflection shall be approved by the Engineer.

(3) Protecting Underground and Surface Structures. Temporary support, adequate protection and maintenance of all underground and surface utility structures, drains, sewers and other obstructions encountered in the progress of the work shall be furnished by the contractor at his own expense under the direction of the Inspector.

(4) Deviations Occasioned by Other Utility Structures. Wherever existing utility structures or branch connections leading to main sewers or to main drains, or other conduits, ducts, pipes, or structures present obstruction to the grade and alignment of the pipe, they shall be permanently supported, removed, relocated or reconstructed by the contractor through cooperation with the City. In those instances where their relocation or reconstruction is impracticable, a deviation from line and grade will be ordered, and the change shall be made in the manner directed by the Engineer. Connections to private residences shall be cut and looped around the pipeline.

(5) Pipe Kept Clean. All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench, and it shall be kept clean by approved means during and after laying.

(6) Bell Ends to Face Direction of Laying. Unless otherwise directed, pipe shall be laid with bell ends facing the direction of laying, and for lines on an appreciable slope, bells shall, at the discretion of the Engineer, face upgrade.

(7) Preventing Trench Water from Entering Pipe. At times when pipe laying is not in progress, the open ends of pipe shall be closed by approved means, and no trench water shall be permitted to enter the pipe.

(8) Cutting Pipe. Cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe.

(9) Pipe Jointing. Jointing of all pipe shall be as recommended by the manufacturer. All pipes shall be handled in such a way so as to prevent damage to the coating and lining. Refer to backfilling specifications for proper bedding and compaction. Thrust blocking shall be applied at all tees, plugs, caps and at bends deflecting 22.5 degrees or more. Prevention of concrete adhesion by means of 10 mil plastic sheeting to protect valves or pipe material shall be directed by the City Inspector.

(10) Pipe shall be laid so as to drain back into the main system when system is out of service. Additional drain lines or blow off valves will be required where gravity draining may not be possible.

(11) Indicator Tape. Indicator tape shall be placed a minimum of 12 inches above the laid pipe to identify the water line for future excavations. A 12 gauge locater wire shall be installed to aid in locating the pipe for identification. The City Public Works Department shall oversee the connection points of the locator wire.

(C) Setting Valve and Fitting.

(1) Location. Gate valves and fittings shall be located as shown on the plans or as directed by the Engineer.

(2) Valve Boxes and Valve Pits. Cast iron valve boxes shall be firmly supported, and maintained centered and plumb over the wrench nut of the gate valve, with box cover flush with the surface of the finished pavement or at such other level as may be directed. Valve box lid shall be stamped "Sprinkler."

(3) Plugging Dead Ends. Standard plugs shall be inserted into the bells of all dead ends of

pipe, toes or crosses and spigot ends shall be capped.

(4) Anchorage of Toes, Tees, and Plugs. Reaction or thrust blocking shall be applied on all pipelines four inches in diameter or larger at all tees, plugs, caps and at bends deflecting 22.5 degrees or more, or movement shall be prevented by attaching suitable metal rods or straps as directed by the Engineer. Thrust block size shall be determined by the subdivider's engineer and shall be shown on the plans.

(5) Material for Reaction Backing. Reaction or thrust blocking shall be of concrete having compressive strength of not less than 2,000 psi. Blocking shall be placed between solid ground and the fitting to be anchored. The area of bearing on pipe and on ground in each instance shall be that required by the Engineer. The blocking shall be so placed that the pipe and fitting joints will be accessible for repair. The pipe shall be protected from the thrust block by a layer of 10 mil plastic.

(6) Blow-off and drain valves shall be installed on dead-end or low elevation point connection lines in accordance with requirements and specifications of the City.

(D) Hydrostatic Tests.

(1) Pressure During Test. After the pipe has been laid and partially backfilled, all newly laid pipe, or any valved section of it, shall, unless otherwise specified, be subjected to maximum operating pressure.

(2) Duration of Pressure Test. The duration of each pressure test shall be at least 30 minutes at 150 psi.

(3) Procedure. Each valved section of pipe shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connections and all necessary apparatus shall be furnished by the contractor.

(4) Expelling Air Before Test. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevation, and afterward tightly plugged.

(E) Cleaning Water Mains. The mains shall be flushed thoroughly. Flushing shall be done after the pressure test is made. It must be understood that such flushing removes only the lighter solids and cannot be relied upon to remove heavy material allowed to get into the main during laying.

Unless extreme care and thorough inspection is practiced during the laying of water mains, small stones, pieces of concrete, particles of metal, or other foreign material may gain access to mains newly laid or repaired. [Ord. 04-11; Code 1971 Appendix § 12.]

8.45.130 Roadway lighting.

(A) General. All outdoor artificial street illuminating devices shall be installed in conformance with the provisions of this section and applicable provisions of the zoning ordinance, subdivision ordinance, and the current electric and electric safety codes adopted by the state of Utah. The spacing and arrangement of street lights will be designed during the preliminary plat or sight plan review phases of a development and shall be a minimum of one light per every 800 feet of roadway, every 400 feet of cul-de-sac depth and at every roadway intersection.

(B) Approved Materials and Methods of Installation. The provisions of this section are to prevent the use of any material or method of installation not specifically prescribed by this section. The City Council must approve any proposed alternatives.

(1) Type and Style of Lights. Street lights shall be purchased by the developer and may be either the "Grand Ville" with trim tabs (Series 1) with a 14 foot Charleston pole or "Grande Ville" (Series 2) with a 14 foot Salem pole.

(2) Lamp Source. High pressure sodium is the lamp source that will be utilized throughout the City for all roadway lighting.

(3) Deviations. Any material or method of installation not specifically prescribed in this section will be evaluated by the City Council as stated above, for approval based on the following criteria:

(a) It provides equivalence to the applicable specific requirements of this section.

(b) It is otherwise satisfactory in complying with the intent of this section.

(c) The plans, and variants to this section for proposed lighting schemes, will be submitted to the Community Development Department for approval, and shall be sufficiently complete, with all variants from this section noted, to enable the City Council to readily determine whether compliance with the intent of this section will be secured.

(4) Variances. Any person desiring to install an outdoor lighting fixture in violation of this section may apply to the City Council with recommendation from the Planning Commission for a variance from the regulation in question.

(C) Roadway Lighting.

(1) Nondecorative Poles and Heads. Nondecorative poles and heads shall only be utilized in the City where, upon the recommendation of the Planning Commission and approval of the City Council, a specific lighting plan has been approved.

(a) All roadway pole-mounted fixtures shall not be mounted above 30 feet, as measured from the top of the fixture to the adjacent grade of the horizontal plane being lit by the fixture.

(b) The fixture should house a high-pressure sodium lamp, with a cut-off lens and no more than 150 watts/pole.

(2) Decorative Poles and Heads. Decorative poles and heads shall be installed as outlined on plans approved through the Community Development Department.

(a) All decorative roadway pole-mounted fixtures shall not be mounted above 18 feet, as measured from the top of the fixture to the adjacent grade of the horizontal plane being lit by the fixture.

(b) The fixture should house a high-pressure sodium lamp, with no more than 150 watts/pole.

(c) Decorative roadway application fixtures should utilize highly refractive globes, which have a minimum of 85 horizontal and 345 vertical prisms, to evenly direct the light, and evenly diffuse the light source. The fixture should have the ability to have internal light-directing reflectors that can be field-installed after fixture installation, to accommodate customization of the lighting output, and/or to redirect unwanted light to the traffic area.

(d) The fixture should have photometrics, so that when used on a 40-foot-wide road and placed on opposing 180-feet spacing, mounted on an 18-foot pole with a Type III distribution and 150 watt HPS head, the following horizontal foot-candles should be produced on the roadway (using a 1.85 light loss factor):

(i) Average maintained equals one foot-candle or more.

(ii) Maintained minimum equals 0.4 foot-candles or more.

(iii) Maximum/minimum uniformity equals 4.54 or less.

(e) At 40 feet away from the pole, the roadway should not have less than 0.1 horizontal foot-candle minimum maintained at any point on the road and one and one-half vertical foot-candles, as measured from ground level to six feet above the ground, in the middle of the road.

(f) The refractor should be made of acrylic, and should be available in Type III and IV distributions, with a reflector in the top to eliminate uplight and redirect the light downward toward the surface, and a house light shield. It sets in die-cast aluminum polyester powdercoated pod, which will allow easy access to all of the internal electrical components. It should have internal twist-lock style photocell receptacle when needed, and quick-release wiring components on the socket, ballast, and igniter, with a ground fault interrupted outlet mounted on the pod. Approved manufacturers are as follows:

(i) Hadco Streetscapes Refractive Globes UT33A150SE-150HPS style or equal.

(g) Light posts shall be 16 feet tall, five-inch by three-inch smooth tapered aluminum pole with a 0.125-inch wall thickness. Bolt circle shall be 14-inch diameter, four bolts, 90 degrees apart, with a decorative base 12.75 inches square by 45 inches high, with a three-inch outside diameter fitter. Aluminum is to be polyester powdercoated black.

(i) Hadco Streetscapes Posts 2520 style or equal.

(3) Road Light Levels. Roadway lighting maximum levels (as measured at the horizontal plane being lit).

(a) The maximum point should not exceed six foot-candles within the circulation area being lit.

(b) The average light level should not exceed one foot-candle within the circulation area being lit.

(c) No more than one foot-candle will be allowed outside of 20 feet of the circulation area being lit.

(d) No more than 0.05 foot-candles will be allowed outside the property lines of the easement.

(e) No more than 0.01 foot-candles should be allowed to spill on any residential property as a result of another party lighting their own property.

(D) Wiring.

(1) Lamp and Pole Wiring. All internal wiring of the lamps shall be accomplished at the manufacturer's facilities. No alterations or modifications shall be accomplished as part of the installation of the lamps.

(2) Applicable Codes. All underground wiring shall be accomplished in accordance with the current electrical code adopted by the state of Utah.

(3) Wire or Cable. Wire shall be a minimum eight gauge copper wire and shall have appropriate coatings as required by the current electrical code. Wire and cable placed in conduit or direct burial shall be rated for the applicable use.

(4) Ground. Pole will be grounded to grounding rod set in the footing as outlined in the standard drawings. Neutral lines shall not be connected to the pole.

(5) Depth of Bury. Direct burial cable conductors and nonmetallic raceways shall be a minimum of 24 inches below the top back of curb or finished grade, whichever is lower. All cable or conduit shall be inside a raceway where less than 24 inches below the top back of curb or finished grade. Cables, conductors, and raceways shall have their location identified by a warning ribbon that is placed in the trench at least 12 inches above the underground installation.

(6) Splices and Taps. Buried conductors or cables, either contained in a nonmetallic raceway or direct bury, shall have no splices or taps.

(7) Backfill. Backfill that contains large rocks, paving materials, cinders, large or sharply angular substances, or corrosive materials that may damage raceway, cables, or conductors or prevent adequate compaction of fill or contribute to corrosion of raceways, cables, or conduits shall not be utilized.

(8)(1) Raceway Seals. Conduits or raceways through which moisture may contact energized live parts shall be sealed or plugged at both ends. [Ord. 04-11; Ord. 02-19; Code 1971 Appendix § 13.]

COUNCIL AGENDA
July 14, 2015

Agenda Item **c** Public Hearing – Proposed Ordinance 15-15 amending Title Three of the Syracuse City Code pertaining to the Museum and Cultural Center Board.

Factual Summation

- Any question regarding this agenda item may be directed at Brody Bovero, City Manager
- The Museum and Cultural Center Board's purpose is to identify, preserve, protect, and enhance historic artifacts associated with the City and its residents and other items of historical significance.
- The current wording of Chapter 3.40 in the Syracuse City Code states that the Board shall consist of between five and nine members.
- Mayor Palmer has proposed that the number of members on the Museum and Cultural Center Board shall be changed from between five to nine members to seven members.
- Please see the attached documentation that has been revised and provided for your review.

ORDINANCE NO. 15-15

AN ORDINANCE OF THE SYRACUSE CITY COUNCIL AMENDING TITLE III OF THE SYRACUSE CITY MUNICIPAL CODE, RELATING TO THE MUSEUM AND CULTURAL CENTER BOARD.

WHEREAS, The Museum and Cultural Center Board's purpose is to identify, preserve, protect, and enhance historic artifacts associated with the City and its residents and other items of historical significance; and

WHEREAS, The current wording of Chapter 3.40 in the Syracuse City Code states that the Board shall consist of between five and nine members; and

WHEREAS, Mayor Palmer has proposed that the number of members on the Museum and Cultural Center Board shall be changed from between five to nine members to seven members.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF SYRACUSE CITY, DAVIS COUNTY, STATE OF UTAH, AS FOLLOWS:

Section 1. Amendment. Section 3.40 of Title Three of the Syracuse City Municipal Code is hereby amended to read in its entirety as follows:

> **3.40.020 Museum and Cultural Center Board.**
> A Museum and Cultural Center Board is hereby established by the City with the following provisions:
> (A) Number and Qualifications. The Board shall consist of ~~between five and nine~~ seven members. Each Board member should demonstrate interest, competence, and knowledge in the operation and function of the Syracuse Museum and Cultural Center.

Section 2. Severability Clause. If any section, part of provision of this Ordinance is held invalid or unenforceable, such invalidity or unenforceability shall not affect any other portion of this Ordinance, and all provisions, clauses and words of this Ordinance shall be severable. This Section shall become effective without codification.

Section 3. Effective Date. This Ordinance shall become effective immediately upon publication or posting.

PASSED AND ADOPTED BY THE CITY COUNCIL OF SYRACUSE CITY, STATE OF UTAH, THIS 14th DAY OF JULY, 2015.

SYRACUSE CITY

ATTEST:

_____ _____

Cassie Z. Brown, City Recorder Terry Palmer, Mayor

Voting by the City Council:

	"AYE"	"NAY"
Councilmember Peterson	_____	_____
Councilmember Lisonbee	_____	_____
Councilmember Duncan	_____	_____
Councilmember Johnson	_____	_____
Councilmember Gailey	_____	_____

COUNCIL AGENDA

July 14, 2015

Agenda Item **d** **Award Contract for Smedley Acres Culinary Waterline Project Phase 2**

Background

This project will construct both culinary and secondary water mains along 2250 South between 2000 West to 1800 West. It also includes curb, gutter, sidewalk, ramps and asphalt. This project will provide sidewalk connection from Smedley Acres subdivision to 2000 West. This project will also delineate the street from the parking areas with a mountable curb.

Resource

Any supporting questions for staff about this agenda item can be directed to Robert Whiteley.

Schedule

The construction will begin as soon as contract documents are in place and be completed by the winter of 2015.

Cost

The bid opening is on July 13, 2015. Additional information regarding the bid results will be added to the packet when they become available.

The Majority of the funding for this phase of the project will come from a Community Development Block Grant in the amount of $286,295. The remaining funds will come from Class C, Culinary, Secondary, and Storm Drain funds.

Recommendation

Award contract to the responsible low bidder.

SYRACUSE CITY

Syracuse City Council Regular Meeting Agenda
July 14, 2015 – 7:00 p.m.
City Council Chambers
Municipal Building, 1979 W. 1900 S.

1. Meeting called to order
   Invocation or thought
   Pledge of Allegiance
   Adopt agenda
2. Presentation of the Syracuse City and Wendy's "Award for Excellence" to Brooklyn Grant and Kenyon Faulconer.
3. Presentation of TAP Award by Utah Local Government Trust (ULGT).
4. Approval of Minutes:
   a. Work Session of May 26, 2015.
   b. Work Session of June 9, 2015
   c. Regular Meeting of June 9, 2015
   d. Special RDA Meeting of June 9, 2015
   e. Special MBA Meeting of June 9, 2015
5. Public Comment: This is an opportunity to address the Council regarding your concerns or ideas. Please limit your comments to three minutes.
6. Final Subdivision Plan Approval, Still Water Lake Estates Phase 7, located at approximately 3669 S. Bayview Drive.
7. Proposed Ordinance 15-14 amending Title Eight of the Syracuse City Code pertaining to construction specifications.
8. Public Hearing: Proposed Ordinance 15-15 amending Title Three of the Syracuse City Code pertaining to the Museum and Cultural Center Board.
9. Authorize Administration to award and execute contract for Smedley Acres Culinary Waterline Project Phase 2.
10. Consideration of cancelling the August 11, 2015 work session and business meetings in observance of Election Day.
11. Councilmember Reports.
12. Mayor Report.
13. City Manager Report.
14. Adjourn.

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In compliance with the Americans Disabilities Act, persons needing auxiliary communicative aids and services for this meeting should contact the City Offices at 801-825-1477 at least 48 hours in advance of the meeting.

CERTIFICATE OF POSTING

The undersigned, duly appointed City Recorder, does hereby certify that the above notice and agenda was posted within the Syracuse City limits on this 9th day of July, 2015 at Syracuse City Hall on the City Hall Notice Board and at http://www.syracuseut.com/. A copy was also provided to the Standard-Examine on July 9, 2015.

CASSIE Z. BROWN, CMC
SYRACUSE CITY RECORDER
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COUNCIL AGENDA

July 14, 2015

Agenda Item **#2** Presentation of the Syracuse City and Wendy's "Award for Excellence" to Brooklyn Grant and Kenyon Faulconer.

Factual Summation

- Any questions regarding this item can be directed at CED staff. Please see the attached memos regarding the Award recipients for July 2015.

Recommendation

The Community & Economic Development Department hereby recommends that the Mayor and City Council present the "Syracuse City & Wendy's Award for Excellence" to Brooklyn Grant and Kenyon Faulconer.

MEMORANDUM

To: Mayor and City Council

From: Community & Economic Development Department

Date: July 14, 2015

Subject: Presentation of the Syracuse City & Wendy's Award for Excellence to Brooklyn Grant and Kenyon Faulconer

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Background

The City wishes to recognize citizens who strive for excellence in athletics, academics, arts and/or community service. To that end, in an effort to recognize students and individuals residing in the City, the Community and Economic Development, in conjunction with Jeff Gibson, present the recipients for the "Syracuse City & Wendy's Award for Excellence."

"Syracuse City & Wendy's Award for Excellence"

This monthly award recognizes the outstanding performance of a male and female who excel in athletics, academics, arts and/or community service. The following are the individuals selected for the award and the reasoning for their selection:

Brooklyn Grant:

Brooklyn Grant is a great softball player. She is a great hitter and a really good pitcher. She led her team to an undefeated record and helped them win the 5/6th grade Girls softball championship. But even more importantly, she was an amazing team player. She was cheering on her team, starting chants in the dugout to get her teammates excited and being the first to congratulate someone for making a great hit or play no matter who's team they were on. Brooklyn is a great athlete and a great team player.

Kenyon Faulconer:

Kenyon is an exceptional baseball player. He helped lead his team to a undefeated season and win the Major league championship in which he pitched in and hit a grand slam to give his team the lead late in the game. Kenyon also was a great team player, always cheering on the other batters or picking his teammates up when they were struggling. Kenyon is a leader not just by hitting grand slams but by having great sportsmanship.

Both students were nominated by Syracuse City Recreation Department

Both students will:

- Receive a certificate and be recognized at a City Council meeting
- Have their picture put up in City Hall and the Community Center
- Have a write up in the City Newsletter, Facebook, Twitter, and website
- Be featured on the Wendy's product TV
- Receive $10 gift certificate to Wendy's

Recommendation

The Community & Economic Development Department hereby recommends that the Mayor and City Council present the "Syracuse City & Wendy's Award for Excellence" to Brooklyn Grant and Kenyon Faulconer.

COUNCIL AGENDA
July 14, 2015

Agenda Item **#3** Presentation of TAP Award by Utah Local Governments Trust

Factual Summation

- The Trust Accountability Program is designed to recognize and reward Trust Member agencies who implement effective safety and loss prevention elements. Less than 10% of Members receive TAP. TAP Award recipients receive an award and 5% of their liability premium back as a bonus. To achieve TAP, members must complete the requirements included in the attached document.

UTAH LOCAL GOVERNMENTS TRUST
55 South Highway 89, North Salt Lake, UT 84054
o 801.936.6400 t 800.748.4440 f 801.936.0300 www.utahtrust.gov

Trust Accountability Program
Requirements and Outline

The Trust Accountability Program provides recognition to member that implement loss prevention best practices. The TAP award will be presented to ANY member who implements and maintains the policies and best practices of the TAP program. Additionally, Trust members completing TAP who carry ***General Liability***, ***Property*** and ***Worker's Compensation*** lines of insurance with the Trust will receive an additional cash award equal to 5% of the member's liability premium. Qualifying members will implement the following best practices and submit the completed application form along with documentation as outlined below.

1) Safety/Incident Review Committee Documentation (Samples attached)
   a. Copies of meeting agenda/minutes from four consecutive monthly meetings during the year for which the award is being applied.
   b. Copies of four monthly "Executive Safety Accountability" reports (or equivalent) that have been presented to the member's governing body.
   c. Documentation showing the system used by the member to track safety deficiencies identified in inspections or audits until they are abated. The myTRUST application is a good system to track findings.
   d. Copies of three incident investigation reports, completed by the Safety/Incident Review Committee, documenting identified root cause or causes and the corrective actions. Investigation may address actual or close call incidents.

2) Workers Compensation Return to Work (RTW) program. Policy will include the following elements:
   a. Written program outlining the members injury reporting procedure and designated providers (Sample attached),
   b. Reasonable accommodation of physician identified work restrictions. (Trust will review claims as part of the application approval process)

3) Driver Qualification Program. (Sample attached)
   a. Driver qualification program must cover employees or volunteers who may drive member owned vehicles, or who may drive any other vehicles while on member business. The driver qualification program should include the following:
      i. Criteria for an acceptable driving history based on MVR (Motor Vehicle Record) and history of job related motor vehicle incidents not recorded on the MVR,
      ii. Review of all drivers' MVR and monitoring of MVR thereafter,
      iii. Summary of actions resulting from identified driver deficiencies.

4) If your entity owns a sewer system:
   a. Submit a copy your Notice of Intent to participate in the Sanitary Sewer Management Plan (SSMP) program and a copy of the final SSMP prior to your compliance deadline.
   b. Submit a summary of the annual sewer manhole inspection. Summary will confirm inspection of ALL manholes in the system during the prior 12 months, identify total number of manholes, total number inspected and the date range when inspections were conducted. Entities with more complex maintenance and inspection systems should contact the Trust to verify applicability of their system to TAP.
   c. Details of the best example of a backup prevented (digital photos are appreciated)

5) Documentation of Training for all Planning & Zoning/Land Use/Board of Adjustment personnel:
   a. Training available online from the Trust
   b. Training from other reputable sources also accepted

UTAH LOCAL GOVERNMENTS TRUST
55 South Highway 89, North Salt Lake, UT 84054
o 801.936.6400 t 800.748.4440 f 801.936.0300 www.utahtrust.gov

TAP Award Application

Entity _____

Mailing Address _____

Date _____ **Phone Number** _____

Person Completing this Application _____

Verify required documentation is attached and affirm qualifications met per outline.

1) Qualifying Coverage (For cash award. All members can receive TAP recognition.)
- ☐ **Liability, Work Comp and Property Coverage through the Trust**

2) Safety Committee
- ☐ **Completed agendas from four consecutive monthly meetings**
- ☐ **Four completed Executive Safety Accountability Reports**
- ☐ **Documentation of how safety inspection deficiencies are tracked to completion**
- ☐ **Three Incident Investigation Reports**

3) Work Comp/Return to Work Policy
- ☐ **Copy of Policy**
- ☐ **Restrictions Accommodated, if applicable**

4) Driver Qualification Standard
- ☐ **Copy of member's Driver Qualification Program**
- ☐ **Verification of MVR Monitoring**
- ☐ **Summary of Actions Take on Deficiencies**

5) Sanitary Sewer Management Plan (SSMP)
- ☐ **Copy of SSMP or Notice of Intent (if before compliance date.)**
- ☐ **Summary of 100% Annual Manhole Inspection (Activities, findings, successes)**

Total Sewer Manholes in System _____ **Number Inspected** _____
- ☐ **Description of your best example of a backup prevented.**

6) Planning & Zoning / Land Use
- ☐ **Roster of all Land Use Personnel with Confirmation of Training (Class & Dates)**

Send the completed application with required documentation to:

Utah Local Governments Trust
55 South Highway 89
North Salt Lake, UT 84054

Safety Committee Meeting Agenda

1. Safety Moment (Current event, experience/thought)
    a. Assign next month's safety moment to a committee member.
2. Review Minutes from last month
    a. Review follow-up assignments.
3. Review of Executive Safety Accountability Report metrics:
    a. See Executive Safety Accountability Report
4. Incident and Close Call Investigations
    a. Review incident reports, assess root causes, recommend solutions to prevent reoccurrence
5. Review Safety Action Register
    a. How many were submitted/completed
    b. Address how to complete the remainder of unsafe conditions
    c. Open forum for safety concerns
6. This month's safety topic: Hazard Analysis, Self Inspection
    a. Training schedule

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Executive Safety Accountability Report

Entity:
Report Date: 2/7/13
Date Range: 9/1/10 To: 2/7/13
Report Author:

	Date
Days Since Last Recordable Accident: 147	9/13/12
Days Since Last Lost Time Accident: 556	8/1/11
Days Since Last Liability Claim: 509	9/17/11

OF NOTE THIS MONTH

Accident: 1/13/2013 Employee strained his back lifting elephant into dumptruck.
Liability Claim: 1/17/13 Sewer backup affecting 2 homes in the Edgewood neighborhood.

LEADING INDICATORS

	Management Audits	Department Safety Audits	Department Safety Meetings	Safety Topics Trained	Safety Committee Meetings
Monthly Goal	2	6	6	2	4
This Month	2	5	6	2	2
Fiscal Year	2	5	6	2	2

Safety Training Topics: Lockout Tagout,

TRAILING INDICATORS

	Near Miss Incidents	First Aid Incidents	OSHA Recordable Incidents	Lost Time Incidents	Liability Claims	Property Claims	Auto Accidents	Public Complaints	Notices of Violation
Goal									
This Month		1				1			
This Quarter		1				2			
Fiscal Year		1				2			

Explanation:

CORRECTIVE ACTIONS

	Safety-Maintenance Work Orders	ULGT Safety Action Register Audit Findings	Public Complaints/Concerns Corrective Actions
Total	15	6	1
Completed	12	4	1
Open	3	2	0

Explanation of Open Action Items: Safety maintenance work orders were not completed due to…

Executive Safety Accountability Report

Entity:
Report Date: 2/2/14
Date Range: 1/1/14 To: 1/31/14
Report Author:

	Date
Days Since Last Recordable Accident: 52	12/12/13
Days Since Last Lost Time Accident: 916	8/1/11
Days Since Last Liability Claim: 869	9/17/11

OF NOTE THIS MONTH

Accident: 1/5/2014 Employee strained his back lifting elephant into dumptruck.
Liability Claim: 1/17/14 Sewer backup affecting 2 homes in the Edgewood neighborhood.

LEADING INDICATORS

	Management Audits (2/Mo Goal)	Department Safety Audits (6/Mo Goal)	Department Safety Meetings (6 Dept @ 1 per Dept/Mo)	Safety Topics Trained	Safety Committee Meetings (1/Mo)	Policies Reviewed/Updated (1/Mo or as needed)	SAFETY Win/Fail Observations (PPE, process, speeding, etc.)	Compliments From The Public	Close Calls Reported	EEs >2 MVR Violations or Accidents
Last Year Total	2	65	70	15	12	9	22	17	27	2
This Month	2	5	5	2	1	1	1	2	2	0
Year	2	5	5	2	1	1	1	2	2	0

Safety Training Topics: Defensive Driving, Ergonomics

TRAILING INDICATORS

	First Aid Incidents	OSHA Recordable Incidents	Lost Time Incidents	Liability Claims	Property Claims	Auto Accidents	Public Complaints	Regulatory Notices of Violation/Fines
Last Year Total	9	0	0	4	1	1	22	0
This Month	1	0	0	1	0	0	1	0
This Quarter	1	0	0	1	0	0	1	0
Year	1	0	0	1	0	0	1	0

Explanation:

CORRECTIVE ACTIONS

	Safety-Maintenance Work Orders	Trust Safety Action Register Audit Findings	Policies/Procedures Reviewed and Updated
Total	15	6	1
Completed	12	4	1
Open	3	2	0

Explanation of Open Action Items: 3 Safety-Maintenance work orders were not completed due to lack of parts. Affected equipment taken out of service.

CONFIDENTIAL

Supervisor Incident Investigation OSHA Case #:_____

This form must be completed by the supervisor,

All reports must be signed by the supervisor, the employee and must be bought off by the operations and the safety managers.
This investigation must be completed within 3 days of the incident, and may be subject to review by our internal auditing committee.

COMPLETE FOR ALL CLAIMS: (NEAR MISS, FIRST AID, HOSPITALIZATION,)

INVOLVED EMPLOYEE INFORMATION:

Name_____ Area / Department:_____ Incident Date: ___ / ___ / ___

DESCRIBE HOW THE INCIDENT OCCURRED: (**BE SPECIFIC** Include Photos / sketches of the scene. Attach witness statements if applicable)_____

_____

_____

IN REVERSE ORDER, DESCRIBE THE INJURY EVENT AND THE EVENTS LEADING UP TO THE INCIDENT. (Starting with the injury/damage moving backward in time reconstruct the sequence of events leading up to the injury.)

Injury event: _____

Preceding event #1: _____

Preceding event #2: _____

Preceding event #3,4 etc.:_____

_____

_____

COMPLETE FOR ALL CLAIMS THAT REQUIRE FIRST AID OR ADVANCED MEDICAL TREATMENT.

Hire Date: _____ Length of Employment: _____. Transfer Date (if applicable): _____.

Time Shift began: _____am / pm. Normal shift: Days of week _____ Hours per Day: _____

Hours Worked in week, up to time of incident _____. Rate: of Pay: $_____

INCIDENT INFORMATION:

What body parts where injured: (Be specific, If needed draw a picture): _____

Type of injury / illness: (check all that apply)

[ ] Cut / Laceration [ ] Puncture Wound [ ] Chemical Inhalation [ ] Chemical Irritation [ ] Chemical Burn
[ ] Heat / Cold Burns [ ] Heat / Cold stress [ ] Physical Exhaustion [ ] Electrical Shock [ ] Fracture
[ ] Sprain / Strain [ ] Dislocation [ ] Contusion / Bruise [ ] Foreign Body
[ ] Other: _____

What kind of First Aid /medical treatment was given?

ON SITE: _____

_____.

OFF SITE: _____

_____.

TREATMENT INFORMATION:

Facility Name:_____ Date of first visit: ___ /___ /___ Follow up visit on: ___ /___ /___ @ _____ pm/am

Name of treating physician or provider _____

Was Employee Treated in the Emergency room? [ ] Yes [ ] No Was Employee Hospitalized over night? [ ] Yes [ ] No

Was a drug screen preformed at time of treatment? [ ] Yes [ ] No Is there any expected lost time [ ] Yes [ ] No

What are the current work restrictions if any? _____

_____

_____

CONFIDENTIAL

Incident Investigation Page 2 Involved Employee Name:_____

Factors Contributing to Cause the Incident: (Check all that apply)		
Actions:	**Conditions:**	**Management**
[ ] Failure to follow policy / training	[ ] Poor workstation design or layout	[ ] Lack of written procedures
[ ] Horseplay	[ ] Congested work environment	[ ] Rules not enforced
[ ] Operating equipment without authority	[ ] Hazardous substance present	[ ] Hazards not identified
[ ] By-passing safety device	[ ] Fire or explosion hazard	[ ] Insufficient worker training
[ ] Using equipment improperly	[ ] Improper tool or equipment used	[ ] Inadequate supervisor training
[ ] Using defective equipment	[ ] Insufficient guards / safety interlocks	[ ] Inexperience of employee
[ ] Servicing equipment while in use	[ ] Slippery conditions	[ ] Insufficient maintenance
[ ] Failure to properly use PPE	[ ] Defective tools, equipment, materials	[ ] Insufficient supervision
[ ] Inattentiveness	[ ] Restricted motion	[ ] Unsafe design (engineering)
[ ] Under the influence	[ ] Inadequate lighting / Ventilation	[ ] Inadequate supervision
[ ] Safety Rule violation	[ ] Excessive noise	[ ] Inadequate work standards
[ ] Improper lifting	[ ] Poor house keeping	[ ] Unrealistic scheduling
[ ] Unsafe acts of others	[ ] High or low temperature	[ ] Other:
[ ] Other:	[ ] Other:	

Explain:

ROOT CAUSES: (Identify all root causes of this incident)

Possibility of incident happening again: [ ] High [ ] Moderately high [ ] Average [ ] Low [ ] Unlikely

Tracking #	CORRECTIVE ACTIONS	Issued To	Due Date	Completed

NOTE: If the incident was caused by faulty equipment submit a **Safety Maintenance Work Order**,

Attach additional pages as necessary. Page_____ of _____

BUY-OFF:

Investigating Supervisor:_____ Date: ___ /___ /___

Employee:_____ Date: ___ /___ /___

Operations Manager: _____ Date: ___ /___ / ___

Safety Manager: _____ Date: ___ / ___/ ___

Property Damage Investigation

Case #:_____

All reports must be signed by a supervisor, the involved employee and must be bought off by the operations and the safety managers. This investigation must be completed within 3 days of the incident with subsequent review by the safety committee.

COMPLETE FOR: (CLOSE CALL AND ACTUAL PROPERTY DAMAGE)

INVOLVED EMPLOYEE INFORMATION:

Name_____ Area / Department:_____ Incident Date: ___ / ___ / ___

Property/Equipment Damaged

Make_____ Model_____ Year _____ Damage Estimate _____

DESCRIPTION OF DAMAGE: (Include

Photo_____

_____

DESCRIBE HOW THE INCIDENT OCCURRED: (**BE SPECIFIC** Include Photos / scene sketches, witness statements, etc)

_____

_____

_____

_____

_____

_____

_____

IN REVERSE ORDER, DESCRIBE THE DAMAGE INCIDENT AND THE EVENTS LEADING UP TO THE INCIDENT. (Start with the damage occurrence move backward in time reconstructing the sequence of events leading up to the damage.)

Preceding event #1: _____

Preceding event #2: _____

Preceding event #3: _____

Preceding event #4: _____

Preceding event #5: _____

Preceding event #6: _____

_____

_____

Incident Investigation Page 2

Involved Employee Name:_____

Factors Contributing to Cause the Incident: (Check all that apply)

Actions:	**Conditions:**	**Management**
[ ] Failure to follow policy / training	[ ] Poor workstation design or layout	[ ] Lack of written procedures
[ ] Horseplay	[ ] Congested work environment	[ ] Rules not enforced
[ ] Operating equipment without authority	[ ] Hazardous substance present	[ ] Hazards not identified
[ ] By-passing safety device	[ ] Fire or explosion hazard	[ ] Insufficient worker training
[ ] Using equipment improperly	[ ] Improper tool or equipment used	[ ] Inadequate supervisor training
[ ] Using defective equipment	[ ] Insufficient guards / safety interlocks	[ ] Inexperience of employee
[ ] Servicing equipment while in use	[ ] Slippery conditions	[ ] Insufficient maintenance
[ ] Failure to properly use PPE	[ ] Defective tools, equipment, materials	[ ] Insufficient supervision
[ ] Inattentiveness / Distraction	[ ] Restricted motion	[ ] Unsafe design (engineering)
[ ] Under the influence	[ ] Inadequate lighting / Ventilation	[ ] Inadequate supervision
[ ] Safety Rule violation	[ ] Excessive noise	[ ] Inadequate work standards
[ ] Improper lifting	[ ] Poor house keeping	[ ] Unrealistic scheduling
[ ] Unsafe acts of others	[ ] High or low temperature	[ ] Other:
[ ] Other:	[ ] Other:	

Explain:

ROOT CAUSES: (Identify all root causes of this incident)

Possibility of incident happening again: [ ] High [ ] Moderately high [ ] Average [ ] Low [ ] Unlikely

Tracking #	CORRECTIVE ACTIONS	Issued To	Due Date	Completed

NOTE: If the incident was caused by faulty equipment submit a **Safety Maintenance Work Order**,

Attach additional pages as necessary. Page_____ of _____

BUY-OFF:

Investigating Supervisor:_____ Date: ___ /___ /___

Employee:_____ Date: ___ /___ /___

Operations Manager: _____ Date: ___ /___ / ___

Safety Manager: _____ Date: ___ / ___/ ___

I. Policy: [Enter Entity Name Here] is committed provide a safe work environment to our employees. But if an employee becomes injured on the job, we will do everything we can to help the employee heal and return to work as quickly as possible. When employees are able to work and be a contributing team member, the injured employee heals faster, we are more productive and the morale of our entire organization is lifted.

II. Workers Compensation Coordinator: [Enter Coordinator's Name Here] is our Workers Compensation Coordinator (WCC). [Enter Coordinator's Name Here]'s direct phone number is (XXX) XXX-XXXX, cell phone number is (XXX) XXX-XXXX, [Email]. The Workers Compensation Coordinator will help injured employees and their supervisors achieve the goal of helping injured employees get healthy and back to being a contributing team member.

III. Medical Providers: If a life-threatening injury occurs, 911 should be called to access normal emergency care. Employees with routine, non-life-threatening injuries should be taken by their supervisor to:
   a. [Network Provider Occupational Medicine Clinic address. List of Network Providers is attached.]
   b. If the Network Provider is not available (after hours, etc.), call the Workers Compensation Coordinator to arrange medical care.
   c. Employees must seek care from the provider designated by the WCC. Failure to do so may affect their workers compensation claim.

IV. Injury Reporting: All injuries, no matter how minor, must be reported immediately to the employee's supervisor. Supervisors report these injuries to the Workers Compensation Coordinator, who begins a workers compensation claim and helps to arrange medical care. All injuries must be reported the day they occur. Failure to report injuries could jeopardize coverage of the injury.

V. Post Injury Procedures: After receiving medical treatment, these steps must be taken:
   a. Employee and his/her supervisor deliver all paper work from the medical provider to the Workers Compensation Coordinator.
   b. WCC and the injured employee's supervisor review any restrictions given by medical provider with the injured employee's job description and determine if the employee's normal job meets the restrictions. If not, a Restricted/Light/Transitional Duty job will be assigned to accommodate the restrictions. (Sample light duty jobs are attached.)
   c. Injured employees must comply with the restrictions they are given. Failure to do so could slow their recovery or cause further injury.

VI. Restricted/Light/Transitional Duty: [Enter Entity Name Here] will accommodate restricted duty jobs for workers injured on the job. The WCC will work with the supervisor to design a work strategy that meets the injured employee's restrictions and accomplishes [Entity's Name]'s goals.

VII. Follow Up: Injured employee's supervisor and the Workers Compensation Coordinator will regularly follow up with the employee and medical providers to make sure the employee is getting the care required, attending their medical appointments, complying with their restrictions and that any restricted duty assignments are helping the employee move closer to their regular job duties.

VIII. Interaction With Adjusters: One of the best ways to help an employee get healthy and return to work quickly is to communicate with adjusters who manage the workers compensation injury claim. They have access to resources and have a vast knowledge in how to help injured employees get better. Utah Local Governments Trust has partnered with Constitution State Services (CSS) to adjust claims. They can be reached at 800.243.2490.

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Driver Qualification Standard (Sample Policy):

All employees or volunteers operating (***entity name***) owned vehicles, or who may operate any vehicle while conducting business for or on behalf of (***entity name***) must be authorized drivers. The authorization process requires an analysis of the employee's driving record to ensure compliance with the driver qualification standard as identified in this policy.

As part of the driver qualification process all drivers or potential drivers' MVR (Motor Vehicle Record) will be screened and monitored on an ongoing basis to ensure the standard is met and maintained. Drivers will be qualified as "Acceptable," or "Borderline". Drivers qualified as "Borderline" may be authorized to drive on a probationary basis as determined by the _____Manager. Drivers who's record does not meet the driver qualification standard will not be allowed to operate any vehicle while engaged in (***city/county/district***) business.

All drivers must posses a valid Drivers License. Required endorsements must also be maintained. The driver qualification evaluation will be based on the driver's MVR and may also take into account work related motor vehicle incidents, whether or not the incident has been recorded on the driver's MVR. All violations recorded on the MVR, whether they occurred on the job or not, are included in the driver qualification evaluation.

"Acceptable" or "Borderline" qualification will be determined using the following criteria. Any number of violations or accident in excess of the "Borderline" criteria constitutes a failure to meet the driver qualification standard resulting in revocation of driver authorization. (Note - DUI and DWI are not evaluated as a standard violation)

Acceptable

- Up to 2 violations recorded on the MVR, or
- Up to 1 at fault work related accident in the prior three years, or
- A combination of 1 violation on the MVR and 1 at fault work related accident in the last three years

Borderline

- 3 to 4 violations recorded on the MVR or,
- 2 at fault work related accidents in the last three years, or
- DUI or DWI with in the last 2-5 years, or
- Any violation for Careless, Reckless or Distracted driving

A single major violation recorded on the MVR, or resulting from a work related incident, *may* result in revocation of the drivers' qualification and driver authorization. Major violations include, but are not limited to:

- DUI or DWI in the previous 24 months
- Failure to stop/report an accident
- Making a false accident report
- Attempting to elude a law enforcement
- Others as determined by the _____ Manager.

UTAH LOCAL GOVERNMENTS TRUST

Motor Vehicle Report Information Request

			Member Number			
DL# (9 Digits)	As Seen on License LAST NAME	As Seen on License FIRST NAME	As Seen on License MIDDLE NAME	DOB YYYYMMDD	DEPARTMENT	ADDITIONAL INFORMATION (OPTIONAL)
000000000	Smith	John	Q	19751231		

UTAH LOCAL GOVERNMENTS TRUST
55 South Highway 89, North Salt Lake, UT 84054
o 801.936.6400 t 800.748.4440 f 801.936.0300 www.utahtrust.gov

The Sanitary Sewer Management Program requirement is only applicable if your entity owns or operates a sewer collection system. If your entity owns the sewer system but contracts with a third party for system maintenance, this section still applies.

1. Submit a copy of your Sanitary Sewer Management Plan (SSMP) or Notice of Intent submitted to DWQ. Refer to the sample program on the following pages. This sample is made available by the State of Utah and gives detail and a boilerplate form for preparing your entity's SSMP.

2. Submit a summary of your completed manhole sewer inspection. This summary must confirm inspection of ALL manholes in the system during the year, total number of manholes in your system and dates on which inspections were conducted. If you contract for the maintenance of your sewer system, your personnel will most likely still need to complete this inspection. The Trust can provide a manual and training on conducting the manhole inspections. A team of one or two employees should be able to inspect 70-100 manholes a day, making the time required to complete this task a matter of days for most systems. Large sewer operators with more complex maintenance systems in place may request the Trust to accept their existing program in lieu of this manhole inspection requirement.

3. Submit your best example (with documentation) of a backup prevented as a result of manhole inspections during the current year. A "backup prevented" is the identification and correction of a problem that would eventually result in a system backup. Examples would include finding an object in a manhole that would eventually be drawn in or catch debris and result in a backup, finding damage to system equipment, surcharging or other likely causes of backups. Documentation of this "best example" would include a written description of the location, suspected cause and nature of the identified adverse condition as well as an account of the corrective actions. Pictures will be an ideal addition to the documentation.

[Public Entity]

Sanitary Sewer Management Plan

Introduction

_____ is a [public entity] established in Utah under the Utah State Code. [public entity] was established in _____(year) and provides sewage collection and/or treatment to

_____

_____. This Sewer System Management Plan (SSMP) manual has been established to provide a plan and schedule to properly manage, operate, and maintain all parts of the sewer collection system to reduce and prevent SSOs, as well as minimize impacts of any SSOs that occur. The Management for this entity recognizes the responsibility it has to operate the sewer system in an environmentally and fiscally responsible manner. As such, this manual will cover aspects of the collection system program necessary to provide such an operation. This manual may refer to other programs or ordinances and by reference may incorporate these programs into this manual.

Definitions

The following definitions are to be used in conjunction with those found in Utah Administrative Code R317. The following terms have the meaning as set forth:

(1) "BMP" means "best management practice".

(2) "CCTV" means "closed circuit television.

(3) "CIP" means a "Capital Improvement Plan".

(4) "DWQ" means "the Utah Division of Water Quality".

(5) "FOG" means "fats, oils and grease". This is also referred to as a Grease Oil and Sand Program(GOSI).

(6) "I/I" means "infiltration and inflow".

(7) "Permittee" means a federal or state agency, municipality, county, district, and other political subdivision [public entity] of the state that owns or operates a sewer collection system or who is in direct responsible charge for operation and maintenance of the sewer collection system. When two separate federal or state agency, municipality, county, district, and other political subdivision of the state are interconnected, each shall be considered a separate Permittee.

(8) "SECAP" means "System Evaluation and Capacity Assurance Plan".

(9) "Sewer Collection System" means a system for the collection and conveyance of wastewaters or sewage from domestic, industrial and commercial sources. The Sewer Collection System does not include sewer laterals under the ownership and control of an owner of real property, private sewer systems owned and operated by an owner of real property, and systems that collect and convey stormwater exclusively.

(10) “SORP” means “Sewer Overflow Response Plan”

(11) "SSMP" means "Sewer System Management Plan".

(12) "SSO" means "sanitary sewer overflow", the escape of wastewater or pollutants from, or beyond the intended or designed containment of a sewer collection system.

(13) "Class 1 SSO" (Significant SSO) means a SSO or backup that is not caused by a private lateral obstruction or problem that:

(a) affects more than five private structures;

(b) affects one or more public, commercial or industrial structure(s);

(c) may result in a public health risk to the general public;

(d) has a spill volume that exceeds 5,000 gallons, excluding those in single private structures; or

(e) discharges to Waters of the State of Utah.

(14) "Class 2 SSO" (Non Significant SSO) means a SSO or backup that is not caused by a private lateral obstruction or problem that does not meet the Class 1 SSO criteria.

(15) "USMP" means the "Utah Sewer Management Program".

General SSO Requirements

The following general requirements for SSO's are stipulated in R317-801 and are included here as general information.

1) The permittee shall take all feasible steps to eliminate SSOs to include:

(a) Properly managing, operating, and maintaining all parts of the sewer collection system;

(b) training system operators;

(c) allocating adequate resources for the operation, maintenance, and repair of its sewer collection system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures in accordance with generally acceptable accounting practices; and,

(d) providing adequate capacity to convey base flows and peak flows, including flows related to normal wet weather events. Capacity shall meet or exceed the design criteria of R317-3.

(2) SSOs shall be reported in accordance with the requirements below.

(3) When an SSO occurs, the permittee shall take all feasible steps to:

(a) control, contain, or limit the volume of untreated or partially treated wastewater discharged;

(b) terminate the discharge;

(c) recover as much of the wastewater discharged as possible for proper disposal, including any wash down water; and,

(d) mitigate the impacts of the SSO.

SSO Reporting Requirements

R317-801 stipulates when and how SSO's are reported. Following are those reporting requirements as of XX/XX/201X.

SSO REPORTING. SSOs shall be reported as follows:

(1) A Class 1 SSO shall be reported orally within 24 hrs and with a written report submitted to the DWQ within five calendar days. Class 1 SSO's shall be included in the annual USMP report.

(2) Class 2 SSOs shall be reported on an annual basis in the USMP annual report.

ANNUAL REPORT. A permittee shall submit to DWQ a USMP annual operating report covering information for the previous calendar year by April 15 of the following year.

Sewer Use Ordinance

[Public Entity] has a sewer use [ordinance, rules, or regulations] that has been adopted by the governing body. This [ordinance or rules] contains the following items as stipulated by Utah State Code R317-801:

1. Prohibition on unauthorized discharges,
2. Requirement that sewers be constructed and maintained in accordance with R317-3,
3. Ensures access or easements for maintenance, inspections and repairs,
4. Has the ability to limit debris which obstruct or inhibit the flow in sewers such as foreign objects or grease and oil,
5. Requires compliance with pretreatment program [delete if no pretreatment program exists],
6. Allows for the inspection of industrial users, and
7. Provides for enforcement of for ordinance or rules violations.

The following elements are included in this SSMP:

- General Information
- Operations and Maintenance Program
- Sewer Design Standards
- Sanitary Sewer Overflow Response Plan
- Grease, Oil and Sand Interceptor Management Program
- System Evaluation and Capacity Assurance Plan
- SSMP Monitoring and Measurement Plan
- Sewer System Mapping Program
- Basement Backup Program [Optional]
- No Fault Sewage Backup Claims Program [Optional\

This program is intended to be a guidance document and is not intended to be part of a regulatory requirement. As such, failure to strictly comply with documentation requirements is, in and of themselves, not a failure of the program's effectiveness. Documentation failures are intended to be identified during system self-audits and will be addressed as training opportunities. Significant system failures will be followed up with corrective action plans. This corrective action process will be implemented by all individuals involved in the SSMP program. Not all [public entity] employees will necessarily be involved in the collection system operations. As such, not all employees will receive program training. Finally, although not a part of this SSMP program, [public entity] is an active participant in the Blue Stakes of Utah Utility Notification system. This system, regulated under title 54-8A of the Utah State Code, stipulates utility notification of all underground operators when excavation takes place. The intent of this regulation is to minimize damage to underground facilities. [Public entity] has a responsibility to mark their underground sewer facilities when notified an excavation is going to take place. Participation in the Blue Stakes program further enhances the protection of the collection system and reduces SSO's.

[Public Entity]

SSMP – General Information

This Sanitary Sewer Management Plan was adopted by [public entity governing board or council] on _____.

The responsible representative(s), position and phone number for [public entity] with regard to this SSMP is/are

_____

_____

_____

_____

_____

_____

Description of Roles and Responsibilities

The following positions have the described responsibility for implementation and management of the specific measures as described in the SSMP.

[include specific public entity information below]

Manager

This individual is responsible for overall management of the sanitary sewer collection system. Responsibilities include working with governance to assure sufficient budget is allocated to implement the SSMP, maintenance of the SSMP documentation, development of a capital improvement program and general supervision of all staff.

Superintendent

This individual is responsible for daily implementation of the SSMP. This includes maintenance activities, compliance with SORP requirements, and monitoring and measurement reporting requirements.

Pretreatment Program Coordinator

This individual is responsible for implementation of the pretreatment program including the fats oil and grease program.

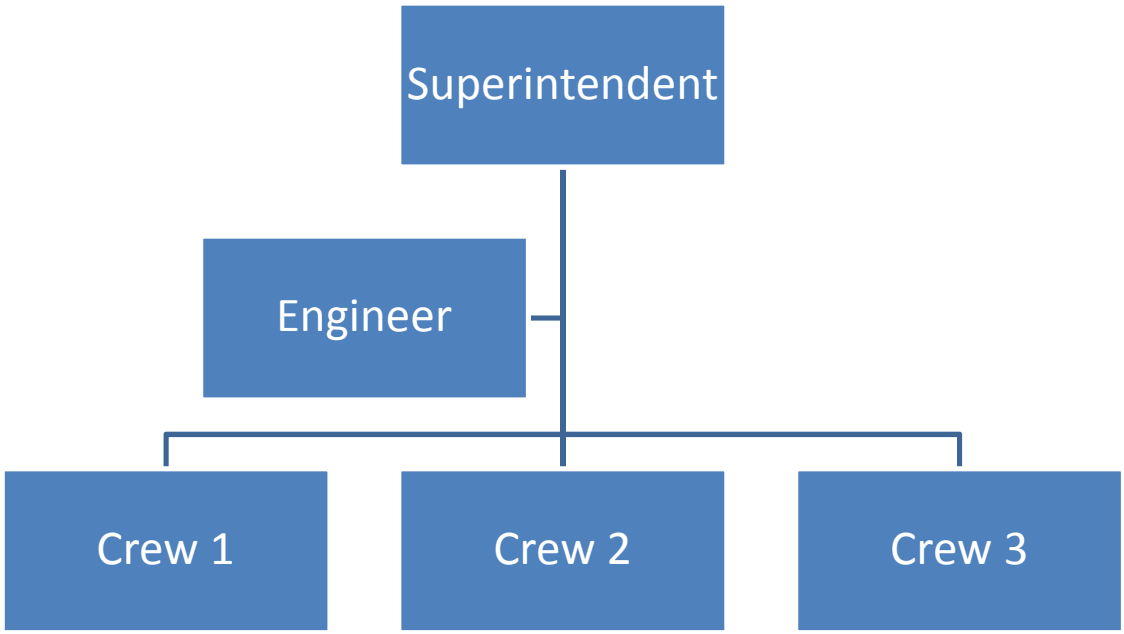
Engineer

This individual is responsible for the development and maintenance of collection system design standards, maintenance of collection system mapping and maintenance of the SECAP program.

[note that the above positions may be multiple people or it may be all one person depending on the size of the organization]

Organization Chart

Below is the organization chart associated with the SSMP [this could be a large chart or just one person depending on organization size]:



[Public Entity]

Operations and Maintenance Program

[Public Entity] has established this sanitary sewer system operations and maintenance program to ensure proper system operations, to minimize any basement backups or SSOs, and to provide for replacement, refurbishment, or repair of damaged or deteriorated piping systems. The combined maintenance program should insure that the environment and health of the public are protected at a reasonable cost for the end users. To this end, the following areas are described and included in this maintenance program [delete programs not desired or needed]:

- System Mapping
- System Cleaning
- System CCTV Inspection
- Pump Station/Pressure Lines Inspection
- Manhole Inspection
- Defect Reporting
- Damage Assessment

System Mapping

An up to date map is essential for effective system operations. [Public entity] has assigned the mapping responsibility to the facility engineer [or other person this responsibility is assigned to] who will prepare and maintain current mapping for the entire sanitary sewer system. Mapping may be maintained on either paper or in a graphical information system (GIS) or a combination of both. Current mapping is available at the following locations:

_____
_____
_____
_____

Should any employee identify an error in the mapping, they should document the error on a defect report and give it to the engineer [or other responsible person].

System Cleaning

Sanitary sewer system cleaning is accomplished through various means and methods.

[Public entity] has established a goal to clean the entire system every five years[insert own goal]. Based on experience over the past 20 years, this frequency significantly reduces the number of basement backups, controls grease problems and flushes any bellies in the system. In addition [public entity] has a listing of identified hot spots which are maintained at a higher frequency. Systems which may have roots are mechanically rodded or hydraulically cut out and areas where restaurants are close together are hydraulically flushed with a high pressure jet truck. The following methods are employed to provide system cleaning:

[Public Entity] Hydraulic Cleaning
Contractor Hydraulic Cleaning [if contractors are used]
[Public Entity or Contractor] Mechanical Rodding.
Chemical Root Control
Chemical FOG Control

Cleaning records are maintained at _____ _____[location of record]. Contractors are required to provide cleaning records associated with their work. Cleaning history may also be entered into the GIS; however, this is not always necessary. Should the cleaning process identify a serious defect, the problem should be reported on a Defect Report Form. The [responsible position] should be given the defect reports for further action. The defect report should be specific as to location and type of problem. A copy of the Defect Report Form is included at the end of this narrative section. A summary of cleaning activities shall be prepared annually by the [responsible position] or designee. This summary will normally be presented to _____ _____. [name of management position or board/council]

System CCTV Inspection

Closed Circuit TV inspections of the sanitary sewer system are used to assess pipe condition and identify problems or possible future failures which need current attention. The CCTV process also identifies the piping condition to allow for replacement prior to failure. Generally [public entity] will conduct CCTV inspection with [its own staff, contractor or both]. Inspections of the system will occur every 10 to 15 years [or other frequency]. This inspection frequency is based on the pipe aging process. As such, once the system has been inspected completely, change usually occurs gradually. CCTV will also be employed when a systems operation or capacity is questioned or

when an SSO occurs. Any defects identified during the CCTV process should be reported on a Defect Report Form and the form should be given to the [responsible position] for possible repairs. Documentation of CCTV activities will be maintained at _____. When contractors are employed to inspect the sanitary sewer system they will be required to submit records for their work. The [responsible position] will prepare an annual summary of CCTV completed for that calendar year.

Pump Station/Pressure Line Inspection [delete if there are no pump stations]

Staff inspects each pump station at least weekly for correct operations. Included in this inspection is a visual observation of the pressure line alignment in order to insure there are no leaks. Pump stations are also monitored via remote monitoring [if available]. Operators inspecting the pump stations will complete the included Pump Station Inspection Form. Should a problem be encountered that cannot be corrected during the inspection, a Defect Report Form should be completed and the form given to the [responsible position]. If the defect has the potential to cause a sanitary sewer overflow, immediate action should be taken to insure no overflow occurs. During the inspection of the pressure sewer alignment, operators should be looking for unusual puddling. If a potential leak is identified a Defect Report should be completed and given to the [responsible position] for further action. An evaluation will be made to determine if there is an actual leak and appropriate action taken.

Manhole Inspection

[Public entity] schedules annual inspection of the sanitary sewer manholes (M/H). The M/H inspection involves the identification of foreign objects and surcharging that may be present. Crews inspecting the manholes will be given maps by the District Engineer who will monitor the progress and completeness of the inspection process. When a potential defect is identified the manhole should be flagged. Flagged manholes should be checked by an operator within several days to determine further action. If, during the inspection process, the inspection crew believes a problem is imminent, they should immediately cease inspecting and inform the [responsible position] of the problem. A cleaning crew should be dispatched immediately to ensure correct system operations. All inspection records should be retained for documentation of work performed.

Defect Reporting

Defect Reports generated through the cleaning, CCTV inspection, pump station inspection or manhole inspection programs will be prioritized for correction by the

[responsible position]. Any defects which have the potential for catastrophic failure and thus create a sanitary sewer overflow should be evaluated immediately and discussed with the [responsible position] for repair. Repair methods may include:

Spot Excavation Repairs
Spot Band Repairs
Segment Excavation Replacements
Segment Lining
Manhole Rehabilitation

When a defect is not flagged for immediate repair, it should be considered for placement on the "hot spot" list. This will allow for vigilant maintenance to ensure failure and a subsequent sanitary sewer overflow do not take place. Defect reports should be used in the Budget process to determine what financial allocation should be made in the next Budget year. The [responsible person] should include outstanding defects in the annual report.

Collection System Damage

Collection damage may occur as a result of multiple factors, some identified as a result of inspection activities and some identified as a result of damage by third parties such as contractors.

Damage Identification

The identification of system damage which may result in an SSO or basement backup is important to prevent environmental, public health, or economic harm. Identification of damage may be from either internal activities or external activities.

Internal activities which may result in the identification of damage include the following:

1. Collections Maintenance Activities
2. CCTV Inspection Activities
3. Manhole Inspection Activities

These three activities are discussed in this Maintenance Program and the identification of damage will result in the generation of a Defect Report.

Generally, damage identification is an iterative and continuous process.

External activities which identify damages include:

1. Contractor Notification of Damage
2. Directional Drilling Notification of Damage
3. Public Damage Complaints

All three of these notifications generally require immediate response. Staff should respond and evaluate the seriousness of the damage and the effect on the environment. Damages which include a release to the environment should be handled in accordance with the SORP. Damages which cause a basement backup should trigger the Basement Backup program. Damages which remain in the trench should be de minimus and do not require more action than the repair of the damage.

Whatever the cause of collection system damage, the response should be expeditious to prevent environmental or economic harm. District staff should consider all damages an emergency until it is shown by inspection to be a lower priority.

Damage Response Actions

When damages occur in the collection system, the following actions help define the path staff should take. These action plans are not inclusive of all options available but are indicative of the types of response that may be taken.

Stable Damage

Inspection activities may show a system damage which has been there for an extended period of time. Such damage may not require immediate action but may be postponed for a period of time. When stable damage is identified and not acted upon immediately, a defect report should be prepared. If such a defect is identified and repaired immediately, a defect report is not needed. An example of stable damage could be a major crack in a pipeline or a severely misaligned lateral connection where infiltration is occurring.

Unstable Damage

Unstable damage is damage which has a high likely hood that failure will

occur in the near future. Such damage may be a broken pipe with exposed soil or a line which has complete crown corrosion. In these cases, action should be taken as soon as there is a time, a contractor, materials and other necessary resources available. When such unstable damage is identified, if possible, consideration should be given to trenchless repairs which may be able to be completed quicker than standard excavation. Immediately after identification the Manager should be contacted to review and take care of budget considerations.

Immediate Damage

When a contractor or others damage a collection line such that the line is no longer capable of functioning as a sewer, this immediate damage must be handled expeditiously. Such damage allows untreated wastewater to pool in the excavation site, spill into the environment or possibly backup into a basement. Under such conditions priority should be given to an immediate repair. Since excavation damage may be a result of contractor negligence or it could be a failure of [public entity] to adequately protect the line by appropriately following the Damages to Underground Utilities Statute 54-8A, priority should be given to effecting a repair and not to determining the eventual responsible party.

As can be determined from the above action plans, priority should always be preventing SSO's and attendant environmental damage, to prevent basement backups and financial impacts, and to prevent public health issues.

[Public Entity]
Sanitary Sewer System Defect Report

Date: _____

Time: _____

Location of Defect: _____

Identified by: _____

Description of Defect: _____

_____

_____

_____

_____

_____

_____

Urgency of Needed Corrective Action:

Immediate Action Required: ☐

Repair or Correct Soon: ☐

Problem Stable: ☐

No Immediate Action Needed: ☐

Recommended Remedial Action: _____

_____

_____

_____

[Public Entity]

Sewer Design Standards

Included [or by reference] in this section are the sanitary sewer design standards for [public entity]. These design standards are intended to be used in conjunction with Utah Administrative Code R317-3. Where a conflict exists between these two standards, the Administrative Code shall prevail.

[The design standards for the public entity should be included with this introduction. If the public entity is small and does not have its own standard, the public entity may default to R317-3 as performance standards.]

[Public Entity]

Sanitary Sewer Overflow Action Plan

Whenever sanitary sewage leave the confines of the piping system, immediate action is necessary to prevent environmental, public health or financial damage from occurring. In addition, quick action in normally needed to mitigate damage which may have already occurred. For the purpose of this section, the following are part of the emergency action plan.

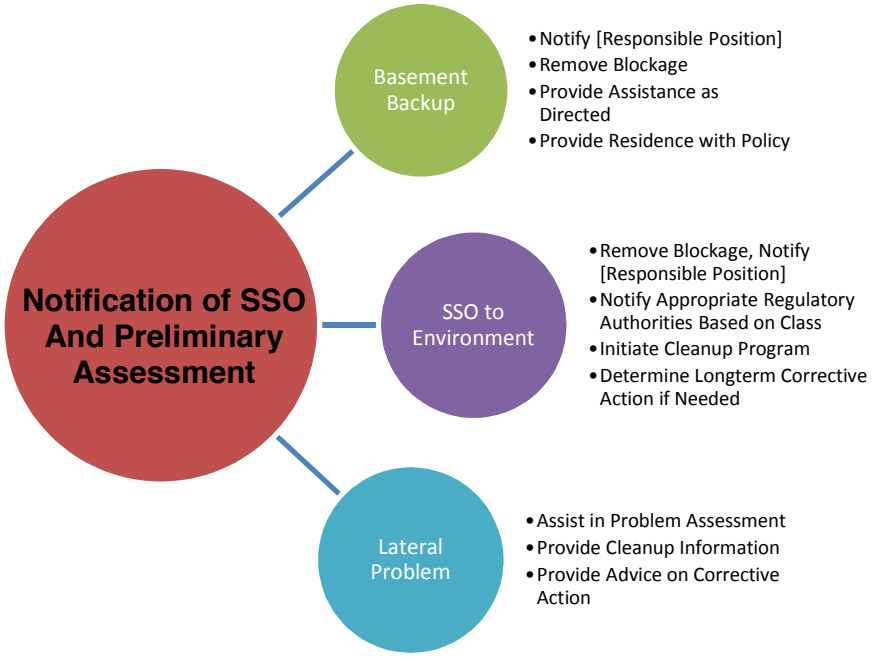
1. Basement backups
2. Sanitary sewer overflows
3. Sanitary sewer breaks which remain in the trench
4. Sewer lateral backups

All of the above conditions are likely to cause some damage. Each should be treated as an emergency, and corrective actions taken in accordance with [public entity] directions. Items 1 & 2 above should be reported immediately based on whether they constitute a Class 1 or Class 2 SSO. As stated in the definition section of the SSMP Introduction, a Class 1 SSO is an overflow which affects more than five private structures; affects a public, commercial or industrial structure; results in a significant public health risk; has a spill volume more than 5,000 gallons; or has reached Waters of the State. All other overflows are Class 2 SSO's. All Class 1 SSO's should be reported immediately. Class 2 SSO's should be documented and reported in the annual SSMP report and included in the Municipal Wastewater Planning Program submitted to the State. Item 3 may be reported to the local health department if, in the opinion of the responsible staff member there is potential for a public health issue. An example of where a public health issue may be present is when an excavator breaks both a sewer and a water line in the same trench. In such cases, the local health department representatives should be contacted and the situation explained. If the health representative requests further action on the part of the District, staff should try and comply. If, in the opinion of the responsible staff member, the health department request is unreasonable, The Manager should be immediately notified. Care should always be taken to error on the side of protecting public health over financial considerations. When a basement backup occurs, the staff member responding should follow the Basement Backup Program procedures. Lateral backups, while the responsibility of the property owner, should also be treated as serious problems. Care should be taken to provide advice to the property owner in such cases, but the property owner is ultimately the decision maker about what actions should be

taken.

Response Activities

There are specific steps that should be followed once a notification is received that an overflow may be occurring. The following figure outlines actions that could be taken when the [public entity] receives notice that a possible overflow has or is occurring.



General Notification Procedure

When a Class 1 SSO occurs specific notification requirement are needed. In such cases the following Notification procedure should be followed and documented. Failure to comply with notification requirements is a violation of R317-801.

Agency Notification Requirements

Both the State of Utah Division of Water Quality and the local health department should be immediately notified when an overflow is occurring. Others that may require notification include local water suppliers, affected property owners and notification may be required to Utah Division of Emergency Response and Remediation if hazardous materials are involved. The initial notification must be given within 24 hours. However, attempts should be made to notify them as soon as possible so they can observe the

problem and the extent of the issue while the problem is happening. A notification form is provided to document notification activities. After an SSO has taken place and the cleanup has been done, a written report of the event should be submitted to the State DEQ within five days (unless waived). This report should be specific and should be inclusive of all work completed. If possible the report should also include a description of follow-up actions such as modeling or problem corrections that has or will take place.

Public Notification

When an SSO occurs and the extent of the overflow is significant and the damage cannot be contained the public may be notified through proper communication channels. Normally the local health department will coordinate such notification. Should [public entity] need to provide notification it could include press releases to the local news agencies, publication in an area paper, and leaflets delivered to home owners or citizens in the area of the SSO. Notification should be sufficient to insure that the public health is protected. When and if Federal laws are passed concerning notification requirements, these legal requirements are incorporated by reference in this document. In general, notification requirements should increase as the extent of the overflow increases.

Overflow Cleanup

When an overflow happens, care should be taken to clean up the environment to the extent feasible based on technology, good science and financial capabilities. Cleanup could include removal of contaminated water and soil saturated with wastewater and toilet paper, disinfection of standing water with environmentally adequate chemicals or partitioning of the affected area from the public until natural soil microbes reduce the hazard. Cleanup is usually specific to the affected area and may differ from season to season. As such, this guide does not include specific details about cleanup. The responsible staff member in conjunction with the State DEQ, the local health department and the owner of real property should direct activities in such a manner that they are all satisfied with the overall outcomes. If, during the cleaning process, the responsible staff member believes the State or the County are requesting excessive actions, the Manager should be contacted.

Corrective Action

All SSO's should be followed up with an analysis as to cause and possible corrective actions. An SSO which is the result of grease or root plug may be placed on the

preventative maintenance list for more frequent cleaning. Serious or repetitive plugging problems may require the reconstruction of the sewer lines. An overflow that results from inadequate capacity should be followed by additional system modeling and either flow reduction or capacity increase. If a significant or unusual weather condition caused flooding which was introduced to the sanitary sewer system incorrectly, the corrective action may include working with other agencies to try and rectify the cross connection from the storm sewer to the sanitary sewer or from home drainage systems and sump pumps. Finally, should a problem be such that it is not anticipated to reoccur, no further action may be needed.

[Public Entity]
Log of Contact with Other Agencies/People

Location of SSO:_____ **Date of SSO:** _____

Agency	Phone Number	Contact Made Yes/No	Time	Remarks
Utah DWQ	801-536-4300 or 801-231-1769			
Local Health Department				
Utah DERR	801-536-4123			
Local Police Department				
Local Fire Agency				
Applicable Water Agency				
US EPA Region VIII	Consult with DWQ			

Other Contacts:

Contact Made With	Phone Number	Contact Made Yes/No	Time	Remarks

[Public Entity]

Grease, Oil and Sand Management Program

Purpose:

The purpose of this program is to provide for the control and management of grease, oil and sand discharges to the District collection system. This program will provide a means to reduce interference with the collection system operation and pass through at the treatment plant.

Regulatory Authority:

Regulatory authority to implement this program is found in the Code of Federal Regulations in 40 CFR 403, General Pretreatment Regulations. State authority for the program is given in the Utah Administrative Code R317-8-8, Pretreatment. Local Authority is found in _____.

Program Implementation:

This program shall be implemented in such a manner as to minimize the impact on businesses which may be affected by this program. In all cases [public entity] will maintain a uniform decision making process. [Public Entity] shall allow for appeals of program requirements in accordance with the appeal process approved by [public entity].

The following steps detail the procedure that [public entity] personnel shall follow in implementing this program.

Evaluation:

[Public Entity] staff will evaluate an industrial user (IU) discharge to determine if grease, oil or sand management is required at the following

events:

1. Issuance of a construction or remodeling building permit.
2. When the collection line in front of the business is CCTV inspected as part of the sanitary sewer system preventative maintenance program.
3. When a downstream sanitary sewer pipeline plugs due to oil, grease or sand.

No further action will be taken if it is determined that no potential exists for significant enrichment of the wastewater with grease, oil or sand. Enrichment is defined as a discharge with greater volume or concentration of grease, oil or sand than that discharged from a typical residential connection. For oil and grease, the typical residential discharge has less than 100 mg/L of oil and grease for any sample taken. Greater concentrations would be enrichment. Also, a significant buildup of oil and grease in the lateral would indicate enrichment. Sand and dirt is not typically discharged from a residential connection. Any potential for sand or dirt discharge would be enrichment.

Implementation:

IU's which are determined to enrich or have the potential to enrich the wastewater with grease, oil, or sand will be required to development a management plan in accordance with the following tracks.

TRACK 1

This track is available for IU's which exist at the time of program implementation. However, not all existing IU's may be permitted to use it. Determination will be made on a case by case basis. IU's on this track will be permitted to either

pay a contractor or [public entity] to clean the main sewer line from their place of business to the nearest trunk line. A trunk line is any sewer line which has an inside diameter of eighteen inches or larger or has been classified as a trunk line by [public entity]. Cleaning frequency will be determined by inspections performed by the [public entity].

TRACK 2

This track requires the IU to install and maintain a grease, oil and/or sand trap on their premises. Quarterly cleaning reports may be required at the discretion of [public entity]. [Public entity] shall inspect and test the grease trap on a periodic basis. The following fees shall apply:

Inspection Fee	$XX.00
Testing Fee	$XX.00

Should the testing reveal grease and oil in excess of 100 mg/L, a fine of $X.XX for each pound of oil and grease discharged for the past reporting period shall be assessed. The pounds of grease and oil shall be determined by using the following equation:

(Total Reporting Period water use in MG)(mg/L O&G - 100)(8.34)

The IU will also be ordered to return to compliance immediately. Retesting will be done within thirty days if the trap has not been cleaned and a cleaning report submitted. Another inspection and testing fee will be assessed. Should the test results still not comply with the 100 mg/L oil and

grease limit, enforcement will be escalated in accordance with the [public entity]'s Enforcement Response Plan. In addition, an entity which is frequently violating the 100 mg/L limit may be issued a pretreatment permit in order to further regulate the IU

Should the testing reveal TSS in excess of 250 mg/L, a fine of $X.XX for each pound of TSS discharged for the past reporting period shall be assessed. The pounds of TSS shall be determined by using the following equation:

(Total Reporting Period water use in MG)(mg/L TSS - 250)(8.34)

The IU will also be ordered to return to compliance immediately. Retesting will be done within thirty days if the trap has not been cleaned and a cleaning report submitted. Another inspection and testing fee will be assessed. Should the test results still not comply with the 250 mg/L TSS surcharge limit, the IU will be placed on a continuous inspection, testing and the surcharge schedule for TSS.

By following the steps discussed above, [Public entity] hopes to maintain a collection system free from excessive backups and a treatment plant in compliance with UPDES discharge conditions.

List of Acceptable Entities That Recycle Oil and Grease

The following list of grease and oil recyclers should be given to all IU's who operate a grease trap. This list may not be all inclusive. Other recyclers may be used if it can be shown that they discharge of the waste appropriately.

Recycler	Phone Number	Address

[This GOSI program is optional for small agencies. Large agencies may use their own GOSI program.]

[Public Entity]

System Evaluation and Capacity Assurance Plan

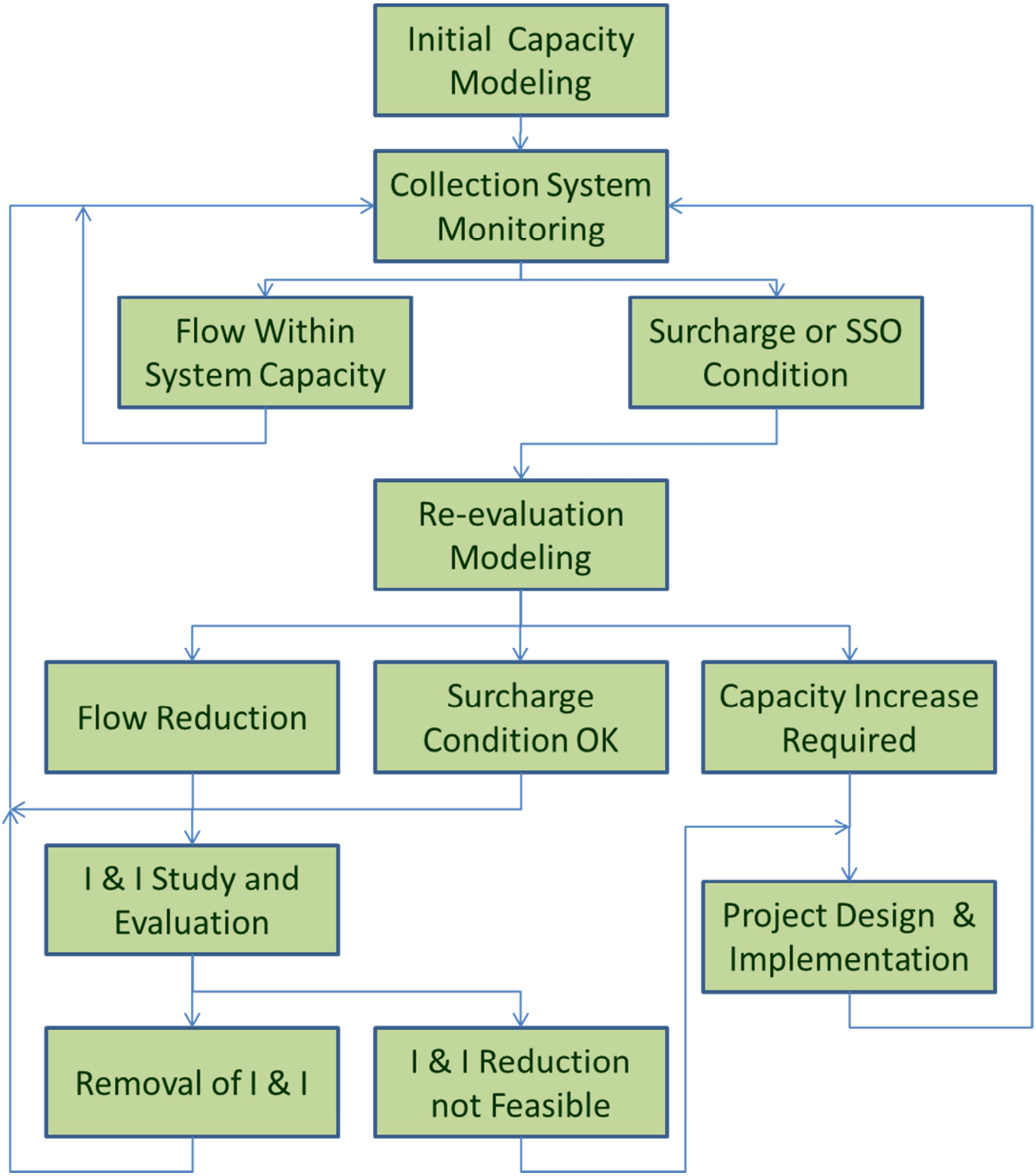
[Public Entity] believes that one of the keys to preventing sanitary sewer overflows is to evaluate system capacity and to monitor flows throughout the system in order to ensure that capacities are not exceeded. Should a collection sub-system exceed the capacity of the pipes, the system will be immediately re-evaluated and corrective action taken. The following elements are all part of [public entity] SECAP program.

1. Initial Capacity Modeling and Master Planning
2. Flow Monitoring
3. Surcharge Flow Analysis
4. Re-evaluation Modeling and Analysis
5. Flow Reduction Evaluation and Implementation
6. Capacity Increase Evaluation and Implementation

The actual implementation process associated with each of the elements above is shown in figure on the next page. This flow chart process forms the backbone of the SECAP.

Initial Capacity Evaluation

[Public Entity] has performed an analysis and modeling of each critical subsystem contained within its collection system. Subsystems are segregated based on the branching of the collection system. Trunk lines and collector lines are evaluated until the system reaches a point where less than 400 residential dwelling unit equivalents (RE) are upstream of that point in the system. The 400 RE point was chosen based on the minimum slope requirements of the State of Utah. An 8-inch pipe constructed on minimum slope will carry the flow from 400 RE based on 3.2 persons per dwelling unit, 75 gpcd and a peaking factor of 4. The RE equivalent is based typical Utah information and assumes the peaking factor will account for a reasonable amount of inflow and infiltration. If an area is known to have, or flow metering identifies, a significant amount of inflow and infiltration, additional evaluation will be needed. In these areas the capacity of an 8-inch pipe system may be significantly reduced below 400 RE.



SECAP Flow Chart

[Note that for a small community there will probably be no need for modeling since most or all sewer lines will have less than 400 homes on them]

In addition to developing an equivalent flow for a residential unit, consideration should also be given to time of concentration in the collection system. Based on typical diurnal flow patterns, if the transit time in the branch system is less than 2 hours, time of concentration can be ignored.

Flow Monitoring

[The public entity should include in this section the types of collection system flow monitoring that is conducted. If flow monitoring is done periodically using portable meters, the method to select the location should be discussed. If flow metering is only done on the influent to the treatment facility, that should be stated. If no metering is conducted, it is recommended that a visual inspection program should be included.]

Surcharge Flow Analysis

If any collection subsystem is identified as having any of the following problems the system will be evaluated to determine future action. These problems are:

1. Sanitary Sewer Overflow to the Environment
2. Sanitary Sewer Break Remaining in the Trench
3. Basement Backup
4. Observed Subsystem Surcharging.

The flow evaluation may result in multiple conclusions, some of which may require further action. Possible conclusions and their further action are listed below. This list is not inclusive nor does it require the specific action detailed. These are given as possible examples and will be used by the [responsible position] to determine correct future action.

Flow Reduction Evaluation

Should excessive flows be identified during the surcharge analysis, the solution may be to proceed with an inflow and infiltration study with the ultimate goal of reducing flows. These flow reductions may be achieved by reconstruction of specific areas, internal spot repairs, removing illegal storm water or sump pump connections from homes or storm water systems, and system grouting. Tools used in flow reduction may include extensive in line camera inspection, smoke testing, dye testing, and increased inspection or flow monitoring.

Foreign Objects or Obstructions

There are multiple foreign objects which may be found in sewers. These may include objects knocked into sewers during construction, illegally placed in sewer manholes, roots, grease and soaps, bellies in piping systems, etc. Each of these problems should be found during the backup investigation and a plan developed to insure the problem does not reoccur. Types of action may include increased cleaning frequency, spot repairs, greater pretreatment activity, lining of pipes, and other corrective actions which resolve the problem.

Allowable Surcharging

Some piping systems may be able to accept surcharges without creating problems. Such systems may be deep and surcharging occurs below the level of basements or manhole rims, or they may be in areas where there are no connections. In such cases the resolution of the observed surcharge may just be additional monitoring.

Revised System Modeling

Where piping system problems cannot be resolved in a less expensive way, the system may be further modeled to determine upgrade needs. Modeling should include known flow information and future projections. Since the system has been shown to have problems, further modeling should be more conservative in flow projections. Revised modeling should follow the guides given next.

Re-evaluation Modeling and Analysis

When a subsystem needs demonstrate unresolvable problems by less costly means, the subsystem should be re-modeled and required action determined. Revised modeling may show that flow reduction may still be viable or it may show that the system can allow current surcharge conditions. Most likely, however, the modeling will normally form the basis for construction to enlarge the subsystem capacity. Modeling should be done either by

1. [Public entity] staff using commercially available software
2. [Public entity] staff using spreadsheet models
3. Engineering firms using available software or spreadsheets.

It is important to insure the modeling is comprehensive and includes all the potential flow

sources. While the current area zoning and land use planning should be used in the model development, care should be taken to discuss possible changes with appropriate officials. Where possible zoning changes appear likely, the model should be re-run with the revised zoning alternatives. Once a resolution has been selected, the resulting project should be placed on the capital improvement plan (CIP).

Capacity Increase Evaluation and Implementation

The capacity evaluation should be expedited based on the impact of the problem on the environment and the possible repeat of the overflow/backup/surcharging. Details on prioritization are given in the next section.

Systems requiring additional capacity should be engineered for expansion by qualified staff or engineering consultants. Project design should be based on acceptable engineering standards and should comply with State of Utah regulations found in R317-3. Easements should be obtained, where needed and the design should include an analysis of other utilities in the vicinity. Design review should be done by the applicable regulatory agency, as appropriate. A design report should be prepared for each project. Where appropriate, the subsystem modeling may be substituted for the design report.

Finalized projects should be placed on the CIP.

System Improvement Prioritization

The priority for improvement should follow the following general guidelines:

High Priority Projects

When there is significant potential for sanitary sewer overflows, or frequent basement backups, the improvement should be considered a high priority and any available budget should be allocated to the project.

Medium Priority Projects

Where the problem is infrequent and the possibility exists that it may not repeat in the near future, the priority for correction is medium. Medium priority projects may be delayed until appropriate budget is available or the priority is adjusted to high priority. Should an SSO or basement backup repeat in the same area, the priority should be immediately revised.

Low Priority Projects

If the observed problem is infrequent, there is possibility that it may not repeat in the near future and the possibility that increased flow in the subsystem is low, the correct priority is low. Low priority projects will be placed in the budget process and evaluated against other needs. These projects will eventually be completed, but the work is not prioritized above plant and equipment needs.

Capital Improvement Plan

The CIP is part of the [public entity]'s budgeting process to insure sufficient revenue to address identified weaknesses in the sanitary sewer system. Items which have been identified as needing a structural fix are placed on the CIP list and the cost for each estimated. Sources of funding should be identified for all high priority projects so that SSO's or other failures do not re-occur. Forecasts of available funding for medium and low priority projects should be made to facilitate future revenue needs.

[Public Entity]

SSMP Monitoring and Measurement Plan

The purpose of this plan is to provide appropriate monitoring and measurement of the effectiveness of the SSMP in its entirety.

Records Maintenance
[Public Entity] intends to maintain appropriate records on operations and maintenance of the sanitary sewer system to validate compliance with this SSMP. However, failure to meet standards set by State DWQ or other regulatory agency during an inspection does not constitute a violation of the SSMP. Rather, deficiencies identified during inspections should be viewed as an opportunity for improvement.

Operations Records
Operations records that should be maintained include the following:

- Daily cleaning records
- CCTV inspections records
- Manhole inspection records
- Hot spot maintenance list
- Spot repairs
- Major repairs
- System capacity information
- SSO or basement backup records including notification documents to appropriate agencies (call logs, etc.)
- Capital Improvement Plan

Records will be maintained by the [responsible position] in a central location. Records may be maintained either on an electronic record or as a paper record. The extent of the record should be sufficient to demonstrate the activity recorded was completed appropriately.

Performance Measurement (Internal Audit)
Periodically, but not less than annually, [public entity] should assess and audit the effectiveness of the elements of this SSMP. All elements should be reviewed for effectiveness as well as all records should be reviewed for completeness. An internal audit report should be prepared preferably annually but no less than once every five years which comments on the following:

- Success of the operations and maintenance program

- Success of other SSMP elements
- Adequacy of the SECAP evaluations
- Discussion of SSO's and the effectiveness of the response to the event including corrective action
- Review of Defect reports and adequacy of response to eliminate such defects
- Opportunities for improvement in the SSMP or in SSO response and remediation

The annual audit report need not be extensive or long. It should, however be sufficient to document compliance with the standards set in the SSMP. The audit reports should be maintained in accordance with the [public entity]'s records retention schedule.

SSMP Updates
When a plan deficiency is identified though an audit, inspection or plan review, and the deficiency requires an SSMP update, the plan may be updated at the discretion of the [responsible position]. SSMP updates should be recorded in a revision index maintained by [responsible position].

SSO Evaluation and Analysis
At least annually in the internal audit and more frequently as needed, [public entity] will evaluate SSO trends based on frequency, location and volume. Trend evaluation will be empirical unless a large number occur sufficient to make a statistical analysis viable. If a trend is identified, a corrective action may be appropriate.

Public Communication and Outreach
[Public entity] will reach out to the public about the development, implementation and performance of the SSMP. This communication may be accomplished by any of the following methods:

- Public hearings
- Public meetings
- Newsletters
- Direct mailing
- Leaflets
- Other effective methods

[Public Entity] will accept comments, either written or verbal and will review such comments for applicability. Public interest may be difficult to generate, but should be sought, non-the-less.

[Public Entity]

Sanitary Sewer System Mapping

[This section contains a description on how the public entity maintains records on the location of sewer lines. Information on the specific type of maps available should be included. Mapping systems include:

- Computer based GIS system
- Paper based mapping system
- Trunkline maps and subdivision maps
- Google Earth pictorial maps

The intent of the section is not to rate one mapping system above another but to encourage up-to-date maps of the sanitary sewer system. For a small system, Google Earth may be a way to show pictorially where the sewer lines are and to document the number of connections on a sub-system.]

[Public Entity]

Basement Backup Program

Basement backups are a serious impact on a home or business owner. As such, all reasonable efforts should be taken to prevent such backups from occurring. Sewer system backups are the result of several system problems. Such problems include any one or a combination of the following:

1. Laterals serving real properties are owned by the property owner and lateral maintenance is their responsibility. Roots, low points, structural failure, and grease are primary problems lateral owners face.

2. Backups caused by main line plugs are usually caused by roots, grease, low points, foreign objects and contractor negligence.

3. Piping system structural damage may cause basement backups. Such structural problems include age or deterioration damage, installation damage, excavation damage and trenchless technology damage.

4. Excess flow problems may surcharge a piping system and cause backups into homes. Excess flows usually occur when major storm waters inflow into sanitary sewers. Sanitary sewers are not designed for such flow. In addition, some homeowners may illegally connect foundation drains and sump pumps to the sanitary sewer system.

Basement Backup Response

When the [public entity] is notified about a basement backup, staff will log the complaint in a complaint log. The person receiving the call may log the backup complaint or may ask administrative staff to document the complaint.

All backup complaints shall be investigated by staff. If the investigation determines that

the case of the backup is only in the lateral, staff may offer technical information but should not take responsibility for cleanup or subsequent restoration.

When it is determined that the basement backup is the result of a mainline problem, [Public Entity] will follow the policy approved by its governing authority. A copy of this policy should be given to the home owner. It should be noted that all action [public entity] takes are on a no-fault basis. [Public entity] does not accept liability nor does it waive its governmental immunity.

Backup Prevention Design Standard

[Public entity] promotes system designs which minimize backups and insure proper operations. To this end [public entity] has a design standard for all system construction. In addition, [public entity] complies with state design standards contained in R317-3. Finally for laterals, the following policy applies:

Policy on the Installation of Backflow Valves

Reference Regulatory Documents:

The following regulations are referenced in the establishment of this policy:

- Utah Code Title 15A-2-103(c). This code section adopts the 2009 edition of the International Plumbing Code.
- The 2009 International Plumbing Code, section 715 Sewage Backflow.

[Public Entity[Policy:

- The State of Utah has adopted the International Plumbing Code(IPC) as its plumbing building standard;
- [Public entity] use the IPC as their statute for plumbing construction and installation;
- And the IPC requires the installation of a sewage backwater valve "where the overflow rim of the lowest plumbing fixtures are below the next upstream manhole in the public sewer."

Therefore, for new construction, [public entity] requires the installation of backwater valves as stipulated by the IPC already propagated for all new construction.

[Public Entity]

No-Fault Sewage Backup Claims Program

The purpose of this program is to assist in the cleanup of real and personal property, and/or compensate persons for the loss of real or personal property, destroyed or damaged as the result of a backup of [public entity] facilities, regardless of fault, within the restrictions, limitations and other provisions of this policy.

Cleanup of Real and Personal Property:

(A) The [responsible position] may, in accordance with the [public entity]'s standard procurement procedures, engage the services of one or more cleanup contractors to perform cleanup services at the direction of the [responsible position] on an as-needed basis.

(B) Upon discovering backup described in this Policy, a property owner should immediately notify the [responsible position] of such event.

(C) Upon notification of the occurrence of the event, the [responsible position] may contact a cleanup contractor under contract with the [public entity] pursuant to subsection (A) above, and direct the cleanup contractor to perform all cleanup work at the premises, in accordance with established cleanup criteria.

(D) In the event the property owner engages the services of a cleanup contractor prior to notifying the [responsible position] of the event, the [public entity] may reimburse the property owner for actual expenses incurred by the property owner, but only up to the amount the [public entity] would have paid its own cleanup contractor under subsection (C) above.

(E) In the event any real or personal property cannot, in the reasonable judgment of the [responsible position], be restored to its pre-event condition, in accordance with the cleanup criteria, the [public entity] may pay to the property owner the estimated fair market value (not the replacement value) at the time of the event, of such real or personal property, with the exception that carpet and major appliances will be replaced with new like-kind items.

(F) In no event will the [public entity] pay, or reimburse the property owner for the payment of special or consequential damages.

Establishment of Cleanup Criteria:

The [responsible position] may, from time to time, establish cleanup criteria which will

govern the [public entity]'s cleanup and payment responsibilities under this Policy. In establishing such cleanup criteria, the [responsible position] may give due consideration to generally available health guidelines, recommendations from governmental and academic experts, and other sources of guidance reasonably deemed by the [responsible position] to be balanced, unbiased, and protective of health and safety.

Application - Time Limitations:
Any request for reimbursement of cleanup expenses under this policy, or payment of fair market value, may be made by filing a written application in such form as prescribed by the [responsible position]. Such application must be submitted to the [public entity] [responsible position] within thirty (30) days after the occurrence of the event.

Qualification for Assistance:
An application or request for assistance or payment under this Policy may qualify only if the [responsible position], after due inquiry or investigation, makes an affirmative determination that the event was the result of a backup of [public entity] facilities, and that none of the following circumstances apply:

(A) The loss was the result of a force majeure including but not limited to acts of God, acts of public enemies, insurrections, riots, war, landslides, lightning, earthquakes, fires, storms, floods, washouts, droughts, civil disturbances, explosions, acts of terrorism, sabotage, or any other similar cause or event not reasonably within the [public entity]'s control;

(B) The loss was caused by either an act or omission of the property owner, the property owner's agent, or a member of the property owner's family or business;

(C) The property owner failed to file a claim hereunder in a timely manner, or failed to comply with any other procedural requirements of this Policy;

(D) The loss is the result of intentional or negligent acts of third parties; or

(E) The loss is wholly covered by private insurance.

Reduction in Assistance:
The [public entity] may limit any assistance, or reduce any payment, under this Policy based upon any of the following:

(A) The property owner did not act responsibly to prevent, avoid or minimize the loss;

(B) The property owner is unable to fully substantiate or document the extent of the loss;

(C) The loss is partially covered by private insurance.

Maximum Payments:
Without the express action of the [public entity] Board of Trustees, no assistance or payment under this Policy may exceed any of the following:

(A) _____dollars ($XXXX) per application or location; or

(B) _____ dollars ($XXXXXXXX) per incident.
Should a catastrophic event occur, the $XXXXXXXX per incident limitation will be prorated against all losses where assistance is requested unless additional funding is approved by the governing authority.

Payment Does Not Imply Liability:
Any assistance or payment made under this Policy shall not be construed as, and does not imply, an admission of negligence or responsibility on the part of the [public entity] for any damage or loss. Any assistance or payment made under this Policy is strictly voluntary on the part of the [public entity]. This Policy shall not in any way supersede, change or abrogate the state government immunity act, Utah Code Annotated, section 63-30-1 et seq., as amended, or its successor, and its application to the [public entity], or establish in any person a right to sue the [public entity] under this Policy. Any assistance or payment made under this Policy and accepted shall constitute a full and complete release of any and all claims against the [public entity], its officers, employees and agents arising from the incident.

Budget Expenditures:
The [public entity] authorizes a fund from which amounts may be drawn to make the foregoing assistance or payments. Such fund may be established from the ordinary rate structure of the [public entity].

Claims from Other Governmental Agencies:
Notwithstanding any other provisions of this Policy, no application shall be accepted from the United States or any of its agencies, the State of Utah or any political subdivision.

UTAH LOCAL GOVERNMENTS TRUST
55 South Highway 89, North Salt Lake, UT 84054
o 801.936.6400 t 800.748.4440 f 801.936.0300 www.utahtrust.gov

Land Use Training

Land use decisions have long-term benefits and consequences for our communities. If we make decisions that are discriminatory or go against legal requirements, we can expose ourselves to lawsuits and potential liability. To ensure we make good, well-informed decisions, the Trust has added a Land Use Training requirement to the Trust Accountability Program. To meet this requirement, all personnel involved in making land use decisions must receive regular land use training. This training is easy to obtain and does not require excessive time. Here are some options for land use training:

1. Utah Local Governments Trust sponsored Land Use Training webinars.
    a. Live online quarterly. Go to training.utahtrust.gov to sign up.
    b. Recorded webinars can be viewed any time. Go to http://www.utahtrust.gov/index2.asp?cat=Webinar to view recorded webinars.
    c. Other training specific to Land Use can meet this requirement. Contact Trust Loss Prevention to make sure the training is applicable.
2. Submit a roster of all Land Use personnel's training (Training source, date, who attended). Land use personnel include Planning and Zoning staff preparing proposals, Planning Commissioners, Board of Reviews members and others who may make Land Use decisions.

Name	Position	Land Use Training Title	Date Attended

COUNCIL AGENDA

July 14, 2015

Agenda Item **#4** Approval of Minutes.

Factual Summation

- Please see the draft minutes of the following meeting(s):
    a. Work Session Meeting of May 26, 2015.
    b. Work Session Meeting of June 9, 2015.
    c. Regular Meeting of June 9, 2015.
    d. Special RDA Meeting of June 9, 2015.
    e. Special MBA Meeting of June 9, 2015.

- Any question regarding this agenda item may be directed at Cassie Brown, City Recorder.

DRAFT

Minutes of the Syracuse City Council Work Session Meeting, May 26, 2015

Minutes of the Work Session meeting of the Syracuse City Council held on May 26, 2015, at 6:00 p.m., in the Council Work Session Room, 1979 West 1900 South, Syracuse City, Davis County, Utah.

Present: Councilmembers: Brian Duncan
Mike Gailey
Craig A. Johnson
Karianne Lisonbee
Douglas Peterson

Mayor Terry Palmer
City Manager Brody Bovero (participated via telephone)
City Recorder Cassie Z. Brown

City Employees Present:
City Attorney Clint Drake
Finance Director Steve Marshall
Public Works Director Robert Whiteley
Fire Chief Eric Froerer
Police Chief Garret Atkin
Acting Community and Economic Development Director Noah Steele
Police Lieutenant Lance Call
Police Lieutenant Heath Rogers
Administrative Intern Taylor Greenwell

The purpose of the Work Session was to receive public comments; have continued discussion regarding a proposed parking ordinance; review the concept plan report for Spring Haven, located at approximately 1840 S. 3475 W.; discuss a proposed code amendment in Title Ten of City Code pertaining to accessory structures; discuss water conservation; discuss the Fiscal Year (FY) 2016 to 2020 Employee Compensation Plan; discuss the FY 2015 to 2016 budget in general; and discuss Council business.

Councilmember Gailey offered an invocation.

6:04:55 PM

Public comments

6:05:00 PM

Brandon Law stated that he is the President of Layton Canal Irrigation and represents Black Island Farms; he wanted to discuss water conservation in the City and he asked that the City participate in enforcing water restrictions to ensure that

residents and businesses are properly conserving water. He stated the area is currently experiencing drought conditions that could have severe impacts on land owners in the future, particularly farmers.

6:06:06 PM

Continued discussion of proposed parking ordinance.

A staff memo from the Police Chief explained he is requesting the adoption of an additional parking ordinance. According to ordinance 11.05.010, Syracuse City has adopted State laws related to parking violations. These laws can be found primarily in 41-6a-1401 - 41-6a-1404 of the Utah Code. The purpose of this proposed ordinance is to allow the Department to better address parking concerns of residents and to provide increased safety. This ordinance would be added to Chapter 11 Section 20 of the Syracuse City Code.

6:06:21 PM

Chief Atkin reviewed his staff memo and referred to the proposed ordinance and State Laws pertaining to parking. The Council had a general discussion regarding the proposed ordinance amendments. There was a focus on amendments that the Council felt would impact a resident's right to monitor and maintain their private property in a manner they see fit. They suggested that many parking issues could be addressed by the City's public nuisance ordinance. Councilmembers Duncan and Johnson indicated they are not supportive of an ordinance that would be stricter than sections of State Code that provide parking restrictions. Chief Atkin indicated he will consider the feedback received tonight in order to proceed with amending his proposal pertaining to a parking ordinance.

6:38:55 PM

Concept Plan Report, Spring Haven, located at approximately 1840 S. 3475 W.

A staff memo from the Community and Economic Development Department explained Syracuse City staff has conducted a concept review of Spring Haven Subdivision:

Subdivision Name: Spring Haven

Location: 1840 S 3475 W

Concept Plan Review May 6, 2014

Current Zoning: R-1 Residential

Total Area: 3.1 Acres

Net Developable Acres: 2.48 acres

Density Allowed: 7 lots

Density Requested: 7 lots

Staff is providing this report in accordance with Syracuse City Code Section 8.20.030, which reads:

8.20.030 Pre-Application Review.

The developer shall meet with City staff to review the plan of the proposed subdivision. The pre-application meeting shall be attended by staff from applicable city departments, special service districts, county agency and others as deemed necessary by the Community Development Director.

The Community Development Director shall report to the Planning Commission and City Council of pre-application meetings during regular work sessions.

6:39:08 PM

City Planner Steele reviewed the staff memo.

6:40:44 PM

The Council engaged in a discussion regarding the development of properties adjacent to the subject property, with a focus on creating adequate access to the subject property. Councilmember Lisonbee asked that every effort be made to consider appropriate access for the subject property and future development of adjacent properties.

6:53:14 PM

Code amendment, Title Ten, pertaining to accessory structures

A staff memo from the Community and Economic Development Department explained the Planning Commission held discussions regarding accessory structures on February 17, March 17, April 7, and April 21, 2015. The Council had a discussion regarding the topic on May 12 and chose to table and discuss the item further in a work session. The Planning Commission has

conducted a review of the accessory structure ordinance in Title X of the City Code. The following is a summary of the changes:

- Clarify confusing language throughout
- Remove the fencing requirement
- Change the setback requirements
- Change the allowed height requirements
- Change the pool/hot tub requirements

6:53:28 PM

City Planner Steele reviewed the staff memo and he reviewed the changes that have been made to the proposed ordinance since it was last reviewed by the City Council. The Council had a focused discussion regarding the fencing requirements around pools and hot tubs, concluding that the fencing height must be a minimum of four-feet.

7:07:48 PM

Water conservation discussion

During the May 12, 2015 City Council meeting, Councilmember Lisonbee asked that an item be added to the next work session meeting agenda to discuss water conservation efforts. Her request was seconded by Councilmembers Gailey and Peterson.

7:07:57 PM

Councilmember Lisonbee noted she has consulted with residents and would like to propose water restrictions be imposed in the City for just this growing season; she proposed that a resolution be adopted that would allow City staff to monitor and enforce watering restrictions during the evening hours. She would like act soon because if water conservations efforts are not made soon the entire City could be in a situation where access to water is cut off before the end of the growing season. She noted non-residential users have a larger impact than residential users.

7:11:22 PM

Councilmember Johnson stated he will not support a resolution that allows the City to penalize residents that are not following the suggested watering schedule. Councilmember Lisonbee noted that guidelines were posted last year and though some residents followed them at the beginning of the growing season, there were not many residents following them at the

end of the season and this caused the City's secondary water pumps to be overtaxed. She noted that if the Council does not address the issue they are being irresponsible to every citizen in the City. She proposed that the resolution include a trigger point, such as the level of the reservoirs, and if that trigger point is reached water restrictions could be enacted and violations of the restrictions could result in a civil penalty.

7:13:10 PM

The Council and Mayor engaged in a discussion regarding the availability of water with Public Works Director Whiteley, with Mayor Palmer indicating he is not supportive of mandatory watering restrictions. Mr. Whitley indicated water levels are at an all-time low since 1981. He noted water demand through the month of May has been low due to the multiple rain storms, but that will not be the case through the duration of the growing season. Discussion and debate regarding Councilmember Lisonbee's proposal ensued, with Councilmember Johnson and Mayor Palmer indicating they would prefer to allow citizens to self-regulate with use of the City's suggested watering schedule. Councilmember Lisonbee noted that the residents have proven they are not willing to self-regulate in the past and she feels it is appropriate for the City to step in and enact a regulation mechanism. Councilmember Duncan stated he would prefer to give the citizenry fair warning of the potential to enact a resolution allowing for enforcement of watering restrictions before actually taking such a drastic measure. Councilmember Lisonbee noted that if the City is placed in a situation where it is necessary to shut down water pumps prior to the conclusion of the growing season, the residents that have actually tried to conserve water will be most impacted though they did not contribute to the problem.

7:33:34 PM

Mr. Whiteley noted that he and his staff are monitoring reservoir levels multiple times each day and he tracks how each reservoir recharges in a day; if recharge is not occurring at a rate adequate to meet demand, he becomes concerned and it may become necessary to turn off water pumps. When he reaches that point he will approach the Council to suggest firm action. The Council could call a special meeting at that point in time to consider such an action. The risk is that it could be too late to act once such a situation occurs. He recognized that Councilmember Lisonbee is trying to be proactive to address this issue. Council discussion of the issue continued with a focus on steps that can be taken to educate the citizens regarding the dire water situation; they determined to delay taking action on mandatory water restrictions at this point in time. Councilmember Peterson concluded he feels that at some point in time the City will need to implement a secondary water metering system that will better enable them to regulate themselves.

7:39:54 PM

Councilmember Gailey suggested that the City schedule a town hall meeting to discuss the current water conditions with the citizenry. Mayor Palmer and City Manager Bovero indicated they will work to schedule such a meeting.

7:41:38 PM

FY2016-2020 Employee Compensation Plan

A staff memo from the City Manager explained in order to attract and retain the best employees possible, the City has adopted The Recruitment and Retention Policy, which outlines responsibilities of leadership, employee compensation, and performance measurement. The policy on employee compensation is to pay employees at the 60th to 70th percentile of the market wage levels. The current compensation plan was successful in determining the proper wage scales for the market, but did not yet address the means by which employees move through their respective wage scales. The proposed compensation plan outlines a plan meet the City's adopted policy, in order to obtain the best talent for the benefit of the citizens of Syracuse City.

7:41:58 PM

Mr. Bovero reviewed his staff memo and used the aid of a PowerPoint presentation to provide the Council with information regarding the proposed amendments to the City's Employee Compensation Plan, concluding he is recommending elimination of a merit bonus in favor of only providing merit increases to employees eligible for such an increase in any given year.

The meeting audio failed from 7:55 p.m. to 8:09 p.m.

8:09:56 PM

Councilmember Peterson inquired as to when the City should receive the results of the efficiency audit; he would like to understand the results of the audit before taking significant action to address wage compression. He noted, however, that he would be willing to support the changes to the Employee Compensation Plan by eliminating the merit bonus included in the Plan.

8:12:57 PM

Council discussion of Mr. Bovero's proposal continued with a focus on the changes in potential employee compensation costs if the merit bonus were eliminated in favor of only offering merit increases each year, with the entire Council concluding they are supportive of eliminating the merit bonus, but they would prefer to wait to take action on the wage compression issue until the City receives the results of the efficiency audit. Mr. Bovero stated he feels the Council's actions to amend the employee compensation plan will be viewed positively by City employees. Councilmember Lisonbee stated she appreciates that City Administration's proposal relative to amendments to the plan is data driven.

8:21:50 PM

General Fiscal Year (FY) 2015-2016 Budget discussion

A staff memo from the Finance Director explained this agenda item is set to discuss any budget questions the City Council may have from their review of the proposed budgets provided at the budget retreat.

8:22:06 PM

Mr. Marshall reviewed his staff memo as well as the schedule for adopting the final FY 2015-2016 budget. He indicated he has made minor amendments to the budget upon receiving feedback from the Council at the budget retreat. He noted he met with Davis County today and they are projecting a five percent increase in home values in the area; they will recommend lowering the property tax rate, which will result in the amount of money the City receives for property tax revenue remaining constant.

8:24:04 PM

Council business

The Council and Mayor provided brief reports regarding the activities they have participated in since the last City Council meeting.

The meeting adjourned at 8:44 p.m.

_____	_____
Terry Palmer	Cassie Z. Brown, CMC
Mayor	City Recorder

Date approved: _____

DRAFT

Minutes of the Syracuse City Council Work Session Meeting, June 9, 2015

Minutes of the Work Session meeting of the Syracuse City Council held on June 9, 2015, at 6:03 p.m., in the Council Work Session Room, 1979 West 1900 South, Syracuse City, Davis County, Utah.

Present: Councilmembers: Mike Gailey
Craig A. Johnson
Karianne Lisonbee
Douglas Peterson

Mayor Terry Palmer
City Manager Brody Bovero

Excused: Councilmember Brian Duncan
City Recorder Cassie Z. Brown

City Employees Present:
Finance Director Steve Marshall
Public Works Director Robert Whiteley
Fire Chief Eric Froerer
Police Chief Garret Atkin
Parks and Recreation Director Kresta Robinson
Acting Community and Economic Development Director Noah Steele

The purpose of the Work Session was to review the agenda for the business meeting to begin at 7:00 p.m.; review the following items forwarded by the Planning Commission:

- Proposed Resolution R15-02, General Plan Amendment request from General Commercial to Planned Residential Development Zone, located at 1600 W. 1700 S., applicant Q-2 LLC.
- Final Subdivision Approval, Monterey Estates Phases 6 & 7, located at approximately 1500 W. 700 S.
- Preliminary Subdivision Plan Approval, Keller Crossing, located at approximately 1975 S. 1000 W.
- Preliminary Subdivision Plan Approval, Spring Haven, located at approximately 1840 S. 3475 W.
- Proposed Ordinance 15-06 amending Title Eight of the Syracuse City Code pertaining to subdivisions, and specifically pertaining to dead-end streets;

and discuss Council business.

6:04:05 PM

Agenda review

Mayor Palmer briefly reviewed the agenda for the business meeting to begin at 7:00 p.m. He noted the agenda for the business meeting was amended yesterday to include an agenda item to allow City Manager Bovero and Public Works

Director Whiteley to provide the citizens with information regarding the City's current culinary water contamination issue. The Council had a discussion regarding further amendments to the agenda by moving planning items ahead of the water advisory report item on the agenda, concluding someone would make a motion during the business meeting to formalize the amendment.

6:08:01 PM

Review items forwarded by the Planning Commission: Proposed Resolution R15-02, General Plan Amendment request from General Commercial to Planned Residential Development Zone, located at 1600 W. 1700 S., applicant Q-2 LLC.

A staff memo from the Community and Economic Development (CED) Department explained the current general plan designation for this parcel is General Commercial. The applicant has requested to break up the parcel and zone the northern part as Planned Residential Development while leaving a little over one half acre along Antelope Drive in the General Commercial zoning. The applicant has indicated intent to develop a 55 and older patio home community. A rezone will also be required upon approval of this application. The applicant requested both portions of his property adjacent to Banbury Dr. be General Planned PRD. The Planning Commission did not feel that the PRD zone was appropriate for the west side of Banbury. The applicant requested a recommendation on the east portion of the property and will amend his application to address a more suitable zone for the west parcel. The Planning Commission recommends approval to the City Council for the General Plan Amendments for the Property owned by Q-2, LLC, at approximately 1600 W 1700 S, from General Commercial to PRD (Planned Residential Development), subject to all applicable requirements of the City's municipal codes.

6:08:25 PM

Acting CED Director Steele reviewed the staff memo. The Council had a brief discussion regarding the configuration of the proposed development, with a focus on appropriate access points for the subject property.

6:08:43 PM

The Council had a discussion regarding the application and the proposed configuration of the development, with Councilmember Johnson asking if the application is conforming to the newly adopted PRD regulations. Councilmember Lisonbee answered yes. There was also a focus on access to the property, specifically the portion of the property located in close proximity to Banbury Drive, with Mr. Steele noting those issues would be addressed during the future development review steps that will be imposed on the subdivision. He also reviewed the concepts for the development, noting the applicant has indicated he plans to develop a senior living community with some duplexes. Councilmember Lisonbee noted she is comfortable approving the PRD designation for all property east of Banbury Drive, but she is concerned about the land use designation for the portion to the west. She noted she may be comfortable with R-3 Residential zoning for that property. Councilmember Peterson stated he does not want the property to the west to remain commercial and he is not sure R-3 provides adequate continuity in the area. Councilmember Lisonbee stated she understands Councilmember Peterson's comments, but feels that approving PRD on both sides of Banbury would 'close in' the existing Banbury development. She reiterated that she would support R-3 zoning on the west side of Banbury. Mr. Steele noted the benefit to allowing PRD on both sides of Banbury is that the applicant would be required to meet open space requirements included in the City's ordinances; those same open space requirements do not apply to R-3 zoning. Councilmember Lisonbee agreed, but noted she would prefer to follow the Planning Commission's recommendation at this point and only approve the PRD application for the property on the east side of Banbury Drive.

6:23:18 PM

Review items forwarded by the Planning Commission:

Final Subdivision Approval, Monterey Estates Phases 6 & 7, located at approximately 1500 W. 700 S.

A staff memo from Acting Community and Economic Development (CED) Director Steele explained this request is for two additional phases to the Monterey Estates development. Approval of this request will complete the subdivision north, to the boundary of the new Syracuse Arts Academy. City staff has no outstanding concerns with this request.

Subdivision Name:	Monterey Estates Phase 6 & 7
Location:	1500 W 700 S

Zone:	R-3 Residential
Applicant:	Ivory Homes
Total Acreage	14.32 acres
Net Developable Acres:	11.46 acres
Allowed Lots (5.44 units/acre)	62
Proposed Lots	52

The memo outlined the timeline for review of the application:

General Plan Amendment Approval	
Planning Commission	August 5, 2014
City Council	August 12, 2014
Rezone Approval	
Planning Commission	August 5, 2014
City Council	August 12, 2014
Concept Plan Staff Review	December 10, 2014
Preliminary Plan Approval	
Planning Commission	February 17, 2015
City Council	March 10, 2015
Preliminary Plan Approval	
Planning Commission	June 2, 2015

The Planning Commission moved to recommend approval, to the City Council, of the final subdivision plan for Monterey Estates Phase 6 & 7 located at approximately 1500 W 700 S, R-3 zone, subject to all applicable requirements of the City's municipal codes and city staff reviews.

6:23:32 PM

Acting CED Director Steele reviewed the staff memo.

6:23:50 PM

Councilmember Lisonbee noted it was her understanding that 1350 West would continue through to the south of the Arts Academy School and connect to another City road, but the plans show the road coming to a dead end. Councilmember

Johnson stated he recalled discussions about that option, but does not believe it was ever finalized. Councilmember Gailey agreed.

6:31:41 PM

City Manager Bovero noted the City has been in discussions with Ivory Homes regarding the potential construction of a trail from the south through the power line heading north to the property that was deeded to the City; this is part of the City's regional trail plan and provides connectivity to the trail on the north side of State Road 193. The trail construction could be in lieu of the payment of impact fees. If the Council is comfortable with the action it will be included in a development agreement for the project. Councilmember Johnson asked if the project would change the layout of the subdivision, to which Mr. Bovero answered no and indicated it is an offsite improvement. Councilmember Peterson stated he is supportive of the project and he thinks it is a great idea. Mr. Bovero noted that he will continue with negotiations of the project. Discussion then centered on other trail and park improvements that may be appropriate upon the completion of the trail connection.

6:26:39 PM

Review items forwarded by the Planning Commission:

Preliminary Subdivision Plan Approval, Keller Crossing, located at approximately 1975 S. 1000 W.

A staff memo from the Community and Economic Development (CED) Department explained Syracuse City staff has conducted a Preliminary review for Keller Crossing:

Subdivision Name:	Keller Crossing
Location:	1975 S 1000 W
Current Zoning:	A-1 Agricultural
General Plan:	R-2 Residential and General Commercial
Requested Zoning:	R-2/R-3
Total Area:	18.58 Acres
R-2	10.07

R-3	8.56
Net Developable Acres:	14.86 acres
R-2	8.56
R-3	6.84
R-2 Density Allowed:	32 lots
Requested:	27 lots
R-3 Density Allowed:	37 lots
Requested:	23 lots

The memo outlined the timeline for review of the application:

Concept Plan Review	April 29, 2015
Preliminary Plan Review	
Planning Commission	June 2, 2015

The Planning Commission moved to recommend approval, to the City Council, of the Preliminary Subdivision Plan for Keller Crossing located at approximately 1975 S 1000 W, R-1/R-2 Zone, subject to all applicable requirements of the City's municipal codes and city staff reviews.

6:26:54 PM

Acting CED Director Steele reviewed the staff memo

6:27:12 PM

Review items forwarded by the Planning Commission:

Preliminary Subdivision Plan Approval, Spring Haven, located at approximately 1840 S. 3475 W.

A staff memo from the Community and Economic Development (CED) Department explained Syracuse City staff has conducted a Preliminary review of the Spring Haven Subdivision.

Subdivision Name:	Spring Haven
Location:	1840 S 3475 W

Current Zoning:	R-1 Residential
Total Area:	3.1 Acres
Net Developable Acres:	2.48 acres
Density Allowed:	7 lots
Density Requested:	7 lots

The memo outlined the timeline for review of the application:

Concept Plan Review	May 6, 2014
Preliminary Plan Approval	
Planning Commission	June 2, 2015

The Planning Commission moved to recommend approval, to the City Council, of the Preliminary Subdivision Plan for Spring Haven Estates located at approximately 1840 S 3475 W, R-1 Zone, subject to all applicable requirements of the City's municipal codes and city staff reviews.

6:27:20 PM

Acting CED Director Steele reviewed the staff memo.

6:28:29 PM

Review items forwarded by the Planning Commission:

Proposed Ordinance 15-06 amending Title Eight of the Syracuse City Code pertaining to subdivisions, and specifically pertaining to dead-end streets.

A staff memo from the Community and Economic Development (CED) Department explained due to the expense of installation, maintenance and removal of temporary turn-arounds within the boundary of a subdivision, Public Works is recommending to modify the Dead End street ordinance. The Syracuse City Planning Commission hereby recommends that the City Council approve the adoption of Ordinance 15-06, Amending Title Eight.

6:28:38 PM

Acting CED Director Steele reviewed the staff memo. Mr. Whiteley reviewed the two options available to the Council in

regards to addressing issues with dead-end streets and temporary turnarounds.

6:37:18 PM

Council business

Mr. Bovero reported the boil order for culinary water has been partially listed for all property east of 3000 West, including 3000 West. He noted a reverse 911 call, press release, notification on the City's website and Facebook page have been used to notify resident. The local volunteer network has been enlisted to spread the word as well.

6:39:52 PM

A resident, no name or address given, discussed the City's recent parks survey and noted that the City does not have a recreational vehicle (RV) park and if such a park were developed people would stay longer in Syracuse and spend more money here, which means the park could be paid for in a short period of time. He stated he commonly hears complaints that people visiting Antelope Drive do not have many camping options and the often go to other cities to camp and park their RVs. Councilmember Peterson stated the City is working to allow overnight camping in Jensen Park, but the idea of a RV park could be taken under advisement. There was a brief discussion about the amount of land available near Jensen Park with a focus on whether the land could be used for something like an RV park.

The meeting adjourned at 6:44 p.m.

_____ _____

Terry Palmer
Mayor

Cassie Z. Brown, CMC
City Recorder

Date approved: _____

DRAFT

Minutes of the Syracuse City Council Regular Meeting, June 9, 2015.

Minutes of the Regular meeting of the Syracuse City Council held on June 9, 2015, at 7:00 p.m., in the Council Chambers, 1979 West 1900 South, Syracuse City, Davis County, Utah.

Present: Councilmembers: Mike Gailey
Craig A. Johnson
Karianne Lisonbee
Douglas Peterson

Mayor Terry Palmer
City Manager Brody Bovero

Excused: Councilmember Brian Duncan
City Recorder Cassie Z. Brown

City Employees Present:
City Attorney Clint Drake
Finance Director Steve Marshall
Public Works Director Robert Whiteley
Fire Chief Eric Froerer
Police Chief Garret Atkin
Parks and Recreation Director Kresta Robinson
Acting Community Development Director Noah Steele

7:00:51 PM

1. Meeting Called to Order/Adopt Agenda

Mayor Palmer called the meeting to order at 7:00 p.m. as a regularly scheduled meeting, with notice of time, place, and agenda provided 24 hours in advance to the newspaper and each Councilmember. Councilmember Gailey provided an invocation. Councilmember Peterson then led all present in the Pledge of Allegiance.

7:03:19 PM

COUNCILMEMBER GAILEY MOVED TO MOVE ITEMS EIGHT, NINE, AND TEN AHEAD OF ITEM 4A ON THE AGENDA AND ADOPT THE AGENDA WITH THOSE CHANGES. COUNCILMEMBER PETERSON SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

7:03:49 PM

2. Presentation of the Syracuse City and Wendy's "Award for Excellence" to Shea Robbins and Aiden Adams.

The City wishes to recognize citizens who strive for excellence in athletics, academics, arts and/or community service. To that end, in an effort to recognize students and individuals residing in the City, the Community and Economic Development, in conjunction with Jeff Gibson, present the recipients for the "Syracuse City & Wendy's Award for Excellence". This monthly award recognizes the outstanding performance of a male and female who excel in athletics, academics, arts, and/or community service. The monthly award recipients will each receive a certificate and be recognized at a City Council meeting; have their photograph placed at City Hall and the Community Center; be written about in the City Newsletter, City's Facebook and Twitter Feed, and City's website; be featured on the Wendy's product television; and receive a $10 gift certificate to Wendy's.

Mayor Palmer noted both teens receiving the award for June 2015 were nominated by Bluff Ridge Elementary School.

Shea Robbins

Shea has demonstrated persistence with her education. This is a student who never gives up! She continues to strive for excellence by setting habits that will support her in her education. Things like a consistent study time, a quiet place to study equipped with all the supplies she'll need to be successful. She also understands how important it is to read. So, she spends 30 minutes a night reading, which supports all other academic areas.

Shea participated in the state-wide Reflections contest in literature and took 1st place at the district for her age group. She is an excellent and creative writer. Her teachers love to read what she writes.

She is a great example of a student leader. She is the first to lead out on any task given to her and is often found leading discussions in her classroom. She includes others at recess and at lunch. She is funny, charming, and eager to please others. Her teachers just love her.

Aiden Adams

Aiden is an exceptional student who models leadership among his peers. He strives to do what is right at all times and models excellent social skills. Aiden is surrounded by a group of friends all the time. People love to be around him. Although he is quiet, he has a great sense of humor that others really enjoy.

He is a top student He has scored a "highly proficient" in English Language Arts, Mathematics, and Science for the past 4 years. He sets high academic expectations for himself and doesn't let anything get in the way of accomplishing his goals.

Aiden is one of those students every teacher dreams of. Respectful, kind, studious, committed, and never gives up He loves all things STEM and desires to go onto bigger and brighter things for his future.

7:10:04 PM

3. Approval of Minutes:

The following minutes were reviewed by the City Council: Work Session and Regular Meeting of May 12, 2015.

7:10:13 PM

COUNCILMEMBER PETERSON MADE A MOTION TO APPROVE THE MINUTES LISTED ON THE AGENDA. COUNCILMEMBER LISONBEE SECONDED THE MOTION; ALL VOTED IN FAVOR, WITH THE EXCEPTION OF COUNCILMEMBER GAILEY WHO ABSTAINED FROM VOTING DUE TO THE FACT THAT HE WAS NOT IN ATTENDANCE DURING THE MAY 12 MEETINGS. Councilmember Duncan was not present when this vote was taken.

7:10:53 PM

8. Final Subdivision Approval, Monterey Estates Phases 6 & 7, located at approximately 1500 W. 700 S.

A staff memo from Acting Community and Economic Development (CED) Director Steele explained this request is for two additional phases to the Monterey Estates development. Approval of this request will complete the subdivision north, to the boundary of the new Syracuse Arts Academy. City staff has no outstanding concerns with this request.

Subdivision Name:	Monterey Estates Phase 6 & 7
Location:	1500 W 700 S
Zone:	R-3 Residential
Applicant:	Ivory Homes
Total Acreage	14.32 acres

Net Developable Acres:	11.46 acres
Allowed Lots (5.44 units/acre)	62
Proposed Lots	52

The memo outlined the timeline for review of the application:

General Plan Amendment Approval	
Planning Commission	August 5, 2014
City Council	August 12, 2014
Rezone Approval	
Planning Commission	August 5, 2014
City Council	August 12, 2014
Concept Plan Staff Review	December 10, 2014
Preliminary Plan Approval	
Planning Commission	February 17, 2015
City Council	March 10, 2015
Preliminary Plan Approval	
Planning Commission	June 2, 2015

The Planning Commission moved to recommend approval, to the City Council, of the final subdivision plan for Monterey Estates Phase 6 & 7 located at approximately 1500 W 700 S, R-3 zone, subject to all applicable requirements of the City's municipal codes and city staff reviews.

7:11:18 PM

Acting CED Director Steele reviewed the staff memo.

7:12:06 PM

COUNCILMEMBER LISONBEE MADE A MOTION TO GRANT FINAL SUBDIVISION APPROVAL FOR MONTEREY ESTATES PHASES SIX AND SEVEN, LOCATED AT APPROXIMATELY 1500 W. 700 S., WITH ONE AMENDMENT:

- THE DEVELOPER IS ASKED TO ENTER INTO A DEVELOMENT AGREEMENT WITH REGARDS TO THE CONSTRUCTION OF A TRAIL IN LIEU OF IMACT FEES.

COUNCILMEMBER GAILEY SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

7:12:53 PM

9. Preliminary Subdivision Plan Approval, Keller Crossing, located at approximately 1975 S. 1000 W.

A staff memo from the Community and Economic Development (CED) Department explained Syracuse City staff has conducted a Preliminary review for Keller Crossing:

Subdivision Name:	Keller Crossing
Location:	1975 S 1000 W
Current Zoning:	A-1 Agricultural
General Plan:	R-2 Residential and General Commercial
Requested Zoning:	R-2/R-3
Total Area:	18.58 Acres
R-2	10.07
R-3	8.56
Net Developable Acres:	14.86 acres
R-2	8.56
R-3	6.84
R-2 Density Allowed:	32 lots
Requested:	27 lots
R-3 Density Allowed:	37 lots
Requested:	23 lots

The memo outlined the timeline for review of the application:

Concept Plan Review	April 29, 2015
Preliminary Plan Review	
Planning Commission	June 2, 2015

The Planning Commission moved to recommend approval, to the City Council, of the Preliminary Subdivision Plan for Keller Crossing located at approximately 1975 S 1000 W, R-1/R-2 Zone, subject to all applicable requirements of the City's municipal codes and city staff reviews.

7:13:00 PM

Acting CED Director Steele reviewed the staff memo

7:13:47 PM

COUNCILMEMBER PETERSON MADE A MOTION TO GRANT PRELIMINARY SUBDIVISION PLAN APPROVAL FOR KELLER CROSSING, LOCATED AT APPROXIMATELY 1975 S. 1000 W. COUNCILMEMBER LISONBEE SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

7:14:07 PM

10. Preliminary Subdivision Plan Approval, Spring Haven, located at approximately 1840 S. 3475 W.

A staff memo from the Community and Economic Development (CED) Department explained Syracuse City staff has conducted a Preliminary review of the Spring Haven Subdivision.

Subdivision Name:	Spring Haven
Location:	1840 S 3475 W
Current Zoning:	R-1 Residential
Total Area:	3.1 Acres
Net Developable Acres:	2.48 acres
Density Allowed:	7 lots
Density Requested:	7 lots

The memo outlined the timeline for review of the application:

Concept Plan Review	May 6, 2014
Preliminary Plan Approval	

Planning Commission June 2, 2015

The Planning Commission moved to recommend approval, to the City Council, of the Preliminary Subdivision Plan for Spring Haven Estates located at approximately 1840 S 3475 W, R-1 Zone, subject to all applicable requirements of the City's municipal codes and city staff reviews.

7:14:26 PM

Acting CED Director Steele reviewed the staff memo.

7:15:15 PM

COUNCILMEMBER LISONBEE MADE A MOTION TO GRANT PRELIMINARY SUBDVSION PLAN APPROVAL FOR SPRING HAVEN, LOCATED AT APPROXIMATLEY 1840 S. 3475 W. COUNCILMEMBER JOHNSON SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

7:15:50 PM

4. Proposed Resolution R15-16 appointing Christopher Weaver to the Syracuse City Arts Council with his term expiring June 30, 2016.

An administrative staff memo indicated Arts Council leadership has requested that Christopher Weaver be appointed to the board to fill a vacancy. Syracuse City Code Title Three provides a process for appointing members of the Arts Council as follows:

> 3.09.020(B) Terms of Office. The terms of office for the five (5) Board members, who are not a member of the Recreation Department, shall be for five (5) years. These members' terms shall be staggered so that no more than one (1) member's term expires at the same time. The terms of office for at-large and ex-officio members shall be five (5) years from the date of appointment. The term of office for the Recreation Department staff designated as a member of the Board shall be as determined by the Department Director. Appointments to the Board shall be made no later than the first City Council meeting in July of each year. In circumstances where appointments are not made prior to the first City Council meeting in July of each year, said appointments shall be made as soon as reasonably possible thereafter.

7:16:13 PM

COUNCILMEMBER JOHNSON MADE A MOTION TO ADOPT PROPOSED RESOLUTION R15-16 APPOITING CHRISTOPHER WEAVER TO THE SYRACUSE ARTS COUNCIL WITH HIS TERM ENDING JUNE 30, 2016. COUNCILMEMBER LISONBEE SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

7:16:49 PM

5. Presentation of Water Advisory

City Manager Bovero used the aid of a PowerPoint presentation to provide the Council and residents with information regarding the recent water contamination situation within the City and the progress that has been made in resolving the issue.

- Morning, June 2nd – City charges secondary system at Gailey Farms Subdivision
- Wednesday, June 3rd around noon – Syracuse Public Works received first call from a resident reporting discolored water.
- Wednesday at 2pm: began and testing and flushing. 7 pm tests showed good condition
- Thursday, June 4th: Additional calls for discolored water. Flushing and testing resumed, plus investigative sample from City and Health Department.
- Additional sample was taken from Weber Basin from their Syracuse source point.
- Morning, Friday, June 5th: City received Health Department's sample result positive for E-coli and Coliform. City immediately shut down secondary system.
- City met with Health Department at 10am on Friday. Second positive sample arrived. The Health Department advised that a public notice was not necessary at this time, until further tests confirm the initial results.
- City, in cooperation with the Health Department, issued a "soft warning" at 1 pm.
- Public Works Water Division discovered the problem at 2pm and isolated the cross-connection to stop further mixing of secondary and culinary water.
- Late Friday Afternoon, City met with Health Department to discuss

- Determination was made to publish boil order at approximately 5 pm.
- City officials met to develop course of action. In conjunction with Health Department, two notices were developed. One for the media outlets, and one for social media and website. Also, reverse 911 call and notification of the local volunteer network.
- City officials worked through the night developing best course of action to address resident's concerns.
- The City opened the Emergency Operations Center at 5 am on Saturday to set up phone bank, social media communication, water distribution, and further information dissemination methods.
- Since Friday evening, City has staffed the incident 24/day, and continually flushed and tested the system.
- City has distributed over 1,045 cases of bottled water.
- The hotline has been staffed with volunteers in the evenings since yesterday.

The presentation indicated the State of Utah requires the City use on of the following incident reporting methods: Broadcast Media (TV/Radio)

- Post notice in conspicuous location
- Hand deliver
- Any method approved by Director

The following methods were used by Syracuse City:

- Broadcast Media (TV/Radio)
- Website
- Social Media
- Reverse 911
- Local Volunteer Network
- 5 Notification methods (4.5 hours)
- Opened EOC 5 am (12 hours)
- Set up phone banks for hotline to handle call volume 6am (13 hrs)
- Obtained bottled water for distribution 10am (17 hours)
- Held press conference detailing the incident (19 hours)

The presentation reviewed the effectiveness of various notification methods:

- Reverse 911:
  - 8,880 on call list
  - 4,393 calls were reached
  - 2,752 went to voice mail
  - 1,509 live answer
  - 30% of calls were outside of Syracuse
  - Estimated reach: 1,954 – voicemail, 1,071- live answer
  - 10,587 people
  - Syracuse City has approx. 7,366 households (27k pop)
- Social Media (Facebook):
  - 119,360 impressions
  - 17,600 clicks
  - 3,700 engaged
  - Estimated Reach: 21,300
- Broadcast Media
  - Unknown impressions
  - KSL, Fox, Ch2, Ch4, and radio
- Website
  - Unknown impressions
  - 9:38pm on Friday, server crashed due to traffic load
  - 10:00pm, Server was online again
- Local Volunteer Network
  - Unknown Reach
  - 5 District Coordinators
  - 5 Geographic regions of the City
  - Network of block captains

Public Works Director Whiteley read the following statement regarding the circumstances that led to the cross-contamination of the City's culinary water system.

City crews discovered a cross connection of culinary and secondary water mains. These mains were installed 7 years ago in 775 South. The cross connection did not create a contamination at that time because both mains in 775 South were tapped to culinary water mains in 2000 West and filled with culinary water.

Gailey Farm is a new subdivision that connected onto the culinary water main on 775 South running it through the subdivision and connected to existing culinary water mains in adjacent roadways. The same process was followed for the installation of secondary water mains. A connection was made at 775 South running mains through the subdivision with connections made to secondary water mains of surrounding developments. It was unknown that the secondary water main which already existed in 775 South was connected to and filled with culinary water.

When valves on the secondary water system serving Gailey Farm were opened, the culinary and secondary water was mixed. The city was first notified of the water discoloration on Wednesday from phone calls. City crews mobilized immediately to the call and have been working round-the-clock since to remedy the situation.

In order to expedite the identification of a potential cross connection, the secondary water was shut down system-wide within the hour after the first failed water sample. Searching for cross-connections can be like looking for a needle in a haystack. Without knowing the point of contamination, the search area could include searching every home and business within a one to two mile radius. Knowing that we could use some help, we notified residents via social media to watch for any sprinklers in operation. In the meantime, our crews worked fervently to locate the source. Approximately four hours later, the source was discovered by our water maintenance workers. The source was immediately isolated to discontinue additional contamination.

System flushing continued and a portable chlorine injection was setup at the point of contamination in order to treat the water rapidly using the same flow path that the contamination followed. Meanwhile daily water quality testing was performed system-wide to determine the extent of the contamination. Test results gave a clear indication that water quality was improving every day. We are continuing to test each day to ensure that our water users have full confidence in the water prior to lifting the boil order. It is our intention to have three days of clean test results. With the exception of failed testing at one location on the west end of our system, all of the results have passed since Monday's collection. We have determined that as of 5:00 pm today, the boil order can be lifted. Residents and

businesses can begin flushing their own water lines by simply running the clean water through them. Information regarding specifics of how to flush is on the city website.

An exhibit has been created to show the sampling that has been performed throughout the city since Thursday. This is a thorough sampling of the entire water system. The different symbols represent different days. Colors represent pass/fail. Green is pass, red is fail, yellow is coliform only fail. The only failed samples occurred at the original area on Friday and Saturday where the discolored water was identified as well as one sample site on the west end of the system that failed both Saturday and Sunday. Each of the areas that failed were re-tested and have passed.

Since we are committed to providing the city with quality drinking water, we are lifting the boil order on all areas east of 3000 West including all who are on 3000 West. Our goal is to achieve three days of clean test results throughout the entire water system.

The public works department employees take their job very seriously. They are dedicated individuals who are committed to high quality work. They sacrifice numerous hours of family and personal time without complaint to help keep our city operating. They are truly unsung heroes who are interested in our wellbeing.

Mr. Bovero then reported that the boil order for culinary water has been partially listed for all property east of 3000 West, including 3000 West. He noted a reverse 911 call, press release, notification on the City's website and Facebook page have been used to notify resident. The local volunteer network has been enlisted to spread the word as well. He noted there is no single notification method that is perfect, which is why the City has used several different methods currently available. He concluded that the work he has seen performed over the past weekend was a great demonstration of dedication by City staff, many of which are also residents of the City. He is proud of what he has seen, but acknowledged there is always room for improvement. He invited the public to provide feedback regarding the things they feel the City could have done better or what they feel was done incorrectly. He then referred to the City's website, which includes a wealth of information for residents to use regarding techniques that are effective in flushing water lines.

7:50:42 PM

6. Public Comments

7:50:57 PM

Joe Peterson stated he lives north of the Junior High School and four people in his family have become ill as a result of the water contamination. He stated his questions are regarding the communication criteria used by the City and he asked if there was a delay in relaying needed information to the public. He stated the information that was eventually presented was good, but the City was late in presenting it. He understands that the City did not want to cause hysteria by providing information, but it would have been better to give the citizens a 'heads up' that there could be a problem. He asked if the City plans to do anything different in the event that a similar situation occurs in the future.

7:52:37 PM

Pat Zaugg thanked the City workers and volunteers who worked tirelessly on the cross contamination issue. She then stated that if the City is receiving numerous phone calls about discoloration of drinking water, the callers should not simply be advised to run their water for 20 minutes in order for it to be safe to drink. She stated she knows several people who had brown water coming from their faucets, yet the City was telling them it was safe to drink and she feels that the City should have contacted those people immediately to conduct an inspection. She agreed with Mr. Peterson's comments and noted that she would prefer that the City notify the residents that there could be a problem with the culinary water and let the residents judge for themselves whether it is safe to drink water; she had two small grandchildren in her home consuming culinary water during two of the four days where there were questions about the safety of the water and that is unpleasant for her. She noted that she received the first reverse 911 call at 9:35 p.m. on Friday evening; she found out about the issue much earlier around 7:00 p.m. and she feels improvements can be made in communicating issues such as this to the citizens. She concluded she is the emergency preparedness specialist in her area and she never received a call from anyone in the City and she feels the process of communicating with individuals such as that in the community needs to be improved.

7:56:37 PM

Robert Jellco stated he lives in the Canterbury Subdivision. He addressed Mr. Whiteley and the plat map that he has that identifies all culinary and secondary water connections and asked if there is an ordinance in place that requires that a developer pass a City inspection for their connections prior to proceeding with their project. He stated developers should have guidance from the City in connecting to the City's water system to prevent something like this from occurring in the

future. He also suggested that a developer be penalized for creating a problem such as this one. He then thanked the City employees for their efforts and addressing the situation as soon as they were aware of it.

7:58:27 PM

Larae Williams stated she is new to the community and her first night in her new home was June 4; it was not until Friday evening that a gentleman in her neighborhood notified her of the water contamination issue. She agrees with Mr. Peterson that the City should notify residents as soon as there is any indication of water contamination. She referenced Mr. Whiteley's map and stated she is unsure whether she is in the boil area. She wondered if there are preventive measures that can be taken to keep something like this from happening again.

8:00:26 PM

Doreen Young stated she is curious about what a soft notification is and why the residents did not receive one sooner. She stated she also drank water and did become ill because she did not learn of the contamination until Friday night. She stated residents should be notified as soon as there is a concern about a contamination. She also asked who is responsible for the bad connection and whether they are going to be paying for the extra water and filters that residents have been forced to pay for. She asked if residents will receive postcards regarding the partial lift of the boil order.

8:01:44 PM

Tamara VanDyck stated she lives on Banbury Drive and she has an extensive water softener system in her house with five filters and she asked who will be paying to replace them since they will cost approximately $200. She added her girlfriend became violently ill on Friday night and was nearly forced to go to the hospital. She agreed that the City should have notified residents much sooner at the sign of a problem.

8:02:49 PM

Spencer Cook stated he lives on 700 South. He thanked the Public Works employees for all their hard work and for distributing water to citizens, which is going above and beyond. However, he agrees with some of the comments that have

been made about the slow response to the situation. He referenced the lifted boil order for the area east of 3000 West and asked that residents receive confirmation of clean samples for the past three days for that area.

8:04:17 PM

Allen Miller stated he lives in the Rock Creek Subdivision and he has a couple of questions. First is why the City is not inspecting connections to the water systems. He noted he had a house fire two years ago and he went through an extensive inspection as he was rebuilding his home and he wondered why water connections are not being inspected as diligently; or, if the connections are being inspected he wondered who is responsible for missing this error. He then wondered if the same situation will occur upon completion of the construction on 700 South. The City needs to make sure that contractors are doing work correctly, especially in regards to patching the roads in which they are performing work. He asked if the City will give residents a break on their water bill for the increased costs associated with flushing residential water systems since that is not the fault of each individual home owner.

8:05:57 PM

TJ Jensen stated that he has two issues to address with the Council; first he addressed the body as the Vice President of the Layton Canal Irrigation Company and noted that the City is operating within 30 percent reduced water provisions this year. The amount of Layton Canal water currently available should last until October 1. He then addressed the Council as the Chair of the Planning Commission; he referenced the application to amend the General Plan for property located on 1700 South. The question was raised during the work session about the land use designation for the property to the west of Banbury Drive and he noted that the Planning Commission only made a recommendation regarding the property to the east of Banbury Drive. He reported the Planning Commission is in the middle of general plan revisions and should be providing some recommendations to the Council in the near future; the property to the west of Banbury Drive could be considered during that process. He noted the City has received complaints about the frequency with which the general plan is being amended and he anticipates the General Plan Steering Committee will make a recommendation to codify a restriction upon amending the general plan more frequently than once every two years.

8:08:41 PM

Chris Semrow stated that he understands the boil has been partially lifted, but he wondered if there will be elevated levels of chlorine in the drinking water and, if so, how long will that be the case.

8:09:14 PM

Miland Palmer stated that he has a public health background. He first thanked the City for their response to the situation and indicated he feels staff has done a good job; the situation could have been much worse, but there is some improvement that can occur. He appreciated information being shared through social media and the fact that social media was being monitored and questions were responded to. He asked how the City plans to react to a future emergency during which phones or social media may not be available; it will be necessary to depend upon a block captain system and word of mouth. His observation is that system did not work well in this situation and he did not receive a phone call or visit from his block captain and that issue needs to be assessed. He stated that as unfortunate as the event was, it presents the City with a great opportunity to assess the systems and plans that are in place to ensure a better response on the future.

8:10:52 PM

Tina Wood stated she lives on Allison Way; she did receive a personal visit from someone informing her of the water contamination. She stated she understands that it takes time to test to determine if the water is safe and she feels the City handled the situation well. Her concern is that if she had known there was a possibility the water was contaminated she would have taken measures to protect her family, specifically her three year old who has a very rare metabolic disorder which could result in death due to vomiting or diarrhea. She stated she is so grateful that her son did not get ill, but if he had gotten ill he would have spent days in the hospital recovering from something that most people get over fairly easily. She stated the emergency response system needs to be adjusted somewhat because there are some people with real health issues who cannot handle E-coli and something should be done to notify them.

8:13:03 PM

Bruce Schofield relayed the story of a situation that occurred some time ago in Syracuse when the artesian wells ran dry and the City had no water. Hooper water lines were eventually ran to provide water to residents below the bluff and those lines were purchased by Syracuse City and became part of the City's water system. He feels the importance of proper

and accurate inspections should be stressed to the City's inspectors because it is not acceptable for something like this to be missed. He stated it does not make sense to locate culinary and secondary lines so close to one another. He concluded by thanking the City for their response.

8:15:42 PM

Jamen Wood stated he lives on Allison Way. He noted he appreciated the efforts of City staff, but agreed there may be some room for improvement. He stated he is confused about how the cross connection impacted people not living in the subdivision in which the connection occurred.

8:16:42 PM

Rick Hartmann stated that at 1:30 a.m. on Wednesday his wife woke with a fever and upset stomach and began vomiting; she had the same symptoms for four days until she heard of the contamination on Sunday. He stated there is problem with the timing of notifying residents of the issue, but he thanked everyone that worked hard to resolve the issue once it was identified. He agreed that proper inspections of water connections must be done.

8:18:15 PM

Kevin Homer stated it seems that there is uncertainty about the practice of inspecting water line connections and he suggested that a moratorium be placed on any additional connections until an internal and external review can be conducted to ensure that the inspection process is appropriately improved.

8:19:14 PM

Mayor Palmer then responded to the comments regarding the lack of or slow notification of the water contamination issue. He reported he has been working to create an emergency preparedness committee and appointing members of the community to the committee. He met with six of the members that will be appointed and worked with them to disseminate information to the residents, but he will work with them to improve notification efforts for future emergencies.

8:21:10 PM

Mr. Whiteley then stated he is unsure of the inspection process that was used to inspect the water line connection for the Titan Subdivision; the work was done seven years ago and all he knows that the connection was made incorrectly. He stated he was not employed by the City at that time and is unaware of the inspection policies that were in place then. He stated he is very interested to learn what went wrong at that time, but reported that the inspection process has been greatly improved and involves all Divisions of the Public Works Department, the superintendents of which work closely with the City Engineer to determine that all subdivision design and construction work is done correctly. His staff is very careful to make sure that all development work is up to code and in line with engineering standards, to the point that some developers have been required to remove infrastructure that has been installed incorrectly or against code. He assured the Council, Mayor, and citizens that the current inspection process is top-notch.

8:25:20 PM

Councilmember Lisonbee asked why the connection was not caught until this time. Mr. Whiteley stated he is not sure why the incorrect connection was not caught until now; he indicated that new culinary water lines are blue and new secondary water lines are purple, but after being in the soil for seven years, the outside of the purple line was almost entirely white and that could be a reason that the incorrect correction was not identified until now. He added that seven years ago the same methods of marking water lines were not used as are used today. Councilmember Lisonbee stated that she is referring to when Gailey Farms connected to the water line; the developer thought they were connecting to a secondary water line because it was purple. Mr. Whiteley stated that is correct and noted the developer of Gailey Farms made the connection correctly because they connected purple pipes to purple pipes and blue pipes to blue pipes and no one realized at the time that the purple pipe had culinary water and the blue pipe had secondary water. He then addressed the question about the level of chlorine in the water system; the maximum contaminant level for chlorine is 4.0 parts per million for drinking water and the City's chlorine levels typically range from 0.3 to 0.5 parts per million and since the contamination the levels have only been increased to range between 0.5 and 1.0 parts per million. He then reviewed the boundaries of the area in which the boil order has been lifted and noted that all samples in that area have been verified as clean for three full days.

8:33:12 PM

Councilmember Lisonbee stated she has heard from many residents about the timing of the notification of the contamination issue. She stated that while the City acted within State law regarding water testing and notification of the contamination, she understands the concerns that have been expressed and would like to suggest that the City work to

develop an action plan for earlier notification that can be employed in similar situations in the future. Councilmember Gailey agreed and noted that one of the best comments he heard is that this is a great opportunity for the City to evaluate and determine how the City could make improvements to better respond to future emergencies. Councilmember Lisonbee encouraged residents in volunteering on a committee relating to emergency preparedness and response to contact her.

8:35:29 PM

Mr. Bovero stated City Administration can work to identify deficiencies within the public notification system, which could potentially include a registry for people with compromised immune systems by which they could receive earlier and more direct notification of potential problems. He addressed Ms. Zaugg's comments about the fact that she was not contacted as the emergency preparedness representative for her area. He noted that Syracuse is divided into five geographic areas that coincide with the five LDS stakes in the City; each of the five areas has an emergency coordinator and each of them was notified. He encouraged residents to become aware of who their emergency coordinator is. He then referenced comments regarding an ordinance requiring proper inspections and noted that the City currently required two levels of inspections; developers agree to build their development according to the approved plans and the plans and the work completed are inspected. He stated that at this time City staff is not fully aware of why the cross connection was missed in inspection, but he plans to conduct an investigation into what occurred. He stated that the City and residents are incurring costs and there may be a potential for legal action in the situation that could aid the City and residents in recovering those costs. He then addressed the question about what a soft notification is. He noted it is not an official public notice, but information that the City provides to residents about any situation that may be occurring. He added the City has published information about properly flushing water systems that can be found on the City's website. He addressed the question about whether residents will get a break on their water rates for the month of June and noted that is a decision for the Council to make and he plans to facilitate discussion regarding that issue at the next City Council meeting. He then addressed the question about how a cross connection impacts areas outside of the development in which the cross connection occurred; he noted the entire water system is ultimately connected together as water users and what occurs in one part of the system has the potential to travel elsewhere. The general flow is from east to west and the risk of problems travelling east is very low and this is part of the reason that it was possible to lift the boil order for areas east of 3000 West. Mr. Whiteley agreed. Mr. Bovero then addressed comments regarding the lack of notification for some and noted that the City used many different methods to notify residents, but he again encouraged that residents become aware of who their block captain is and ensure

those block captains have correct contact information for them. He concluded the City will be conducting an internal and external review of the City's inspection process.

8:45:57 PM

Councilmember Peterson asked if the health department is tracking illnesses that may have occurred as a result of the contamination. Mr. Bovero noted that the City has had steady communication with the health department and he asked a representative of the health department to provide information about their tracking methods. Dave Spence, Davis County Health Department Environmental Health Services Director, noted that the health department is tracking illnesses and has been instructing callers to visit their physician and ask for specific test to determine the cause of their illnesses. As of this evening there are two confirmed cases that could have potentially been caused by the water contamination. Mayor Palmer asked if a resident must visit a doctor to confirm their illness was caused by the contamination, to which Mr. Spence answered yes.

8:48:31 PM

Councilmember Lisonbee asked if the health department is aware of the strain of E-coli found in the water. Mr. Spence answered no and stated that the E-coli test used for water does not identify the strain of the bacteria and the test does not indicate whether it is a strain that can cause illness. Councilmember Lisonbee asked if there is a test that identifies the strain. Mr. Spence stated his lab does not have the capability of identifying the strain.

8:49:32 PM

Councilmember Gailey stated there has been concern about filters harboring bacteria and he would suspect that bacteria can pass through the filters, which is why dilution is the most critical defense mechanism available to the residents. Mr. Spence stated there are so many different types of filters and the only advice he can offer is for residents to refer to the manufacturer of the filter to determine if bacteria can pass through the filter. He stated that it is important to have chlorine in the system because it will be pulled through lines and cleanse them.

8:51:37 PM

A resident re-approached and asked how long the valve at Gailey Farms had been open before the problem was identified. Mr. Palmer stated that the valve was opened last Tuesday morning at 8:50 a.m. The resident asked why an investigative sample of the water was not taken on Tuesday rather than waiting until Friday. Mr. Whiteley stated the City

received the first complaint Wednesday and he was not aware of the potential for a cross contamination on Tuesday. The resident asked when the first investigative test was competed. Mr. Whiteley stated that chlorine residual test was done on Wednesday and an investigative test was done Thursday; it is not uncommon to see mineral deposits stirred up with higher water flows and that is the reason the investigative test was not done until Thursday. The resident stated if there was a concern the investigative test should have been conducted and she asked if the test is very expensive. Mr. Whiteley stated that the investigative test does cost money, but that is not the reason that the test was not completed. He stated his first concern is the same as the concerns of the residents and he and his staff did everything possible to ensure the citizens have access to a safe drinking water system. The resident stated that she was raised with the philosophy of "better safe than sorry" and she feels the City should have done all testing possible rather than waiting to see if people started getting sick. Councilmember Lisonbee stated that was not the City's reaction; the results of the chlorine residual test were good on Wednesday and there was no further concern due to the fact that it is common to see discolored water each spring as sediment in the line is stirred up. She stated no one intentionally decided to wait to see if anyone got sick. The resident indicated she is not from Utah and is not familiar with secondary water systems, but it is her feeling that it would have been most appropriate to test for any problem as soon as it seems there was a problem with the water. She indicated that for the most part she feels everything was handled well, but it would have been nice for notification to occur earlier. Councilmember Lisonbee thanked the resident for her feedback.

8:56:32 PM

7. Proposed Resolution R15-02, General Plan Amendment request from General Commercial to Planned Residential Development Zone, located at 1600 W. 1700 S., applicant Q-2 LLC.

A staff memo from the Community and Economic Development (CED) Department explained the current general plan designation for this parcel is General Commercial. The applicant has requested to break up the parcel and zone the northern part as Planned Residential Development while leaving a little over one half acre along Antelope Drive in the General Commercial zoning. The applicant has indicated intent to develop a 55 and older patio home community. A rezone will also be required upon approval of this application. The applicant requested both portions of his property adjacent to Banbury Dr. be General Planned PRD. The Planning Commission did not feel that the PRD zone was appropriate for the west

side of Banbury. The applicant requested a recommendation on the east portion of the property and will amend his application to address a more suitable zone for the west parcel. The Planning Commission recommends approval to the City Council for the General Plan Amendments for the Property owned by Q-2, LLC, at approximately 1600 W 1700 S, from General Commercial to PRD (Planned Residential Development), subject to all applicable requirements of the City's municipal codes.

8:56:51 PM

Acting CED Director Steele reviewed the staff memo.

8:59:50 PM

Mayor Palmer asked if the applicant has indicated the land use designation he would like to see assigned to the property west of Banbury Drive. Mr. Steele stated he believes the applicant is seeking PRD zoning on that property as well, but the Planning Commission has made a recommendation to leave that property as is.

9:00:03 PM

Eric Craythorne stated that the Planning Commission indicated that the felt the property should be developed in a manner consistent with the property to the north, with is an R-3 residential development. He stated he would like for the Council to consider approving PRD for the properties on the east and west of Banbury as is part of his application. Councilmember Lisonbee inquired as to Mr. Craythorne's plans for the property to the west of Banbury Drive. Mr. Craythorne stated that the property would be part of the entire project and he would like to have the option of creating open space with some amenities on the western portion of the property. He stated he has not completed an extensive design of the project as he has been waiting to see how the Council acts on this application. Councilmember Lisonbee asked Mr. Craythorne if he has any plans to sell the property to a developer. Mr. Craythorne answered no and stated he will be the developer. Councilmember Lisonbee asked if Mr. Craythorne would be willing to enter into a development agreement stipulating that the western parcel would be used for open space rather than housing. Mr. Craythorne stated he would be willing to negotiate the terms of a development of agreement that benefits the entire project. Councilmember Lisonbee asked Mr. Craythorne if he is comfortable with the Council proceeding as recommended by the Planning Commission and waiting to take action on the western parcel after the Planning Commission concludes their review of the general plan amendment process, to which Mr. Craythorne answered yes.

9:03:09 PM

Mayor Palmer asked Mr. Craythorne what types of units he plans to construct within the development. Mr. Craythorne stated he plans to construct two-unit attached homes, slab on grade, but more design work is necessary before those plans are finalized. He stated he would be willing to include design standards in the development agreement as well.

9:04:39 PM

Councilmember Peterson stated he would prefer for the western parcel to be part of the PRD development rather than R-3 or commercial.

9:06:11 PM

Councilmember Lisonbee stated that requiring that the western parcel of property be open space would provide for an easier transition for the residents of Banbury that have become accustomed to two large fields at the entrance of their subdivision for the past 20 years. Mr. Craythorne agreed and stated he is open to discussion and negotiation of that type of development.

9:06:23 PM

COUNCILMEMBER LISONBEE MADE A MOTION TO ADOPT PROPOSED RESOLUTION R15-02 APPROVING THE GENERAL PLAN AMENDMENT REQUEST FROM GENERAL COMMERCIAL TO PLANNED RESIDENTIAL DEVELOPMENT ZONE FOR PROPERTY LOCATED AT APPROXIMATELY 1600 W. 1700 S., APPLICANT Q-2, LLC., WITH THE STIPULATION THAT MR. CRAYTHORNE BE ALLOWED TO PROCEED WITH A GENERAL PLAN AMENDMENT APPLICATION FOR THE PROPERTY ON THE WEST SIDE OF BANBURY WITHOUT PAYING ADDITIONAL FEES. COUNCILMEMBER GAILEY SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

9:07:20 PM

11. Proposed Ordinance 15-06 amending Title Eight of the Syracuse City Code pertaining to subdivisions, and specifically pertaining to dead-end streets.

A staff memo from the Community and Economic Development (CED) Department explained due to the expense of

installation, maintenance and removal of temporary turn-arounds within the boundary of a subdivision, Public Works is recommending to modify the Dead End street ordinance. The Syracuse City Planning Commission hereby recommends that the City Council approve the adoption of Ordinance 15-06, Amending Title Eight.

9:07:31 PM

Acting CED Director Steele reviewed the staff memo.

9:08:53 PM

COUNCILMEMBER GAILEY MADE A MOTION TO ADOPT ORDINANCE 15-06 AMENDING TITLE EIGHT OF THE SYRACUSE CITY CODE PERTAINING TO SUBDIVISIONS, AND SPECIFICALLY PERTAINING TO DEAD-END STREETS. COUNCILMEMBER PETERSON SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

9:09:21 PM

12. Public Hearing: Proposed Resolution R15-13 adopting the certified tax rate provided by Davis County and adopting the Fiscal Year 2015-2016 budget.

As required by Utah Code Annotated 10-6-113, the governing body shall establish the time and place of a public hearing to consider its adoption and shall order that notice of the public hearing be published at least seven days prior to the public hearing. This requirement has been met since the City Council adopted the tentative budget on May 12 and set a public hearing on June 9, 2015 to consider adoption of the final budget. As required by Utah Code Annotated 10-6-118, "before the last June 22 of each fiscal period, or, in the case of a property tax increase under Sections 59-2-919 through 59-2-923, before August 17 of the year for which a property tax increase is proposed, the governing body shall by resolution or ordinance adopt a budget for the ensuing fiscal period for each fund for which a budget is required under this chapter. A copy of the final budget for each fund shall be certified by the budget officer and filed with the state auditor within 30 days after adoption." There have been a few changes made to this budget proposal since the tentative budget was adopted on May 12, 2015. These include:

- Amending the budget to align with revised employee compensation plan. This includes changing from a 2.75% bonus to a 2.3% raise. Total savings with this adjustment was $26,206.00
- Added $5,000 in overtime costs to the CED budget to cover demand for building and development happening in the City.
- Added $5,000 to administration budget to purchase HR hiring software.
- Benefit elections and changes made by full-time employees = an increase of $34,418.
- With these changes, our surplus balance in the budget is $53,470.

This is the last Council meeting during which the Council can adopt a final budget before the June 22 deadline provided by State Law.

9:09:42 PM

Finance Director Marshall reviewed the staff memo.

9:13:25 PM

Councilmember Lisonbee asked if there is funding in the budget to cover emergencies like the one the City has been dealing with over the past weekend. Mr. Marshall stated that the City has money to set aside for emergency preparedness, but it is the City's policy to spend money in the event of an emergency or disaster and amend the budget at a later date to account for those expenses. Councilmember Lisonbee stated that the State Legislature passed a bill a couple of sessions ago that would allow cities to set aside monies for emergencies, but it is very difficult to get money out of those reserve funds so she would hesitate to put money in an emergency fund. Mr. Marshall agreed and stated he has hesitated to recommend the City put money in an emergency fund simply because the City's fund balance acts as an emergency fund with fewer restrictions. The Council briefly discussed the concept of setting aside money for emergencies, with Councilmember Lisonbee suggesting that the City's fund balance policy be amended to acknowledge funding set aside for emergency situations. The Council concluded to place the $53,470 of surplus balance in the fund balance with no earmarks.

9:17:55 PM

Mayor Palmer opened the public hearing.

9:18:04 PM

A resident, no name or address given, asked for information regarding the $34,000 increase for employee benefits. Mr.

Marshall stated that each year during open enrollment employees can make changes to their benefit plans and some benefit costs increase if an employee changes their plan from single to double or family coverage.

9:19:26 PM

TJ Jensen noted he is happy to see that the City is not increasing taxes this year and he commended Mr. Marshall and other staff for doing a good job in preparing the budget.

9:20:06 PM

There were no additional persons appearing to be heard and Mayor Palmer closed the public hearing.

9:20:17 PM

COUNCILMEMBER PETERSON MADE A MOTION TO ADOPT PROPOSED RESOLUTION 15-13 TO ACCEPT THE CERTIFIED TAX RATE PROVIDED BY DAVIS COUNTY AND ADOPT THE FISCAL YEAR 2015-2016 BUDGET. COUNCILMEMBER GAILEY SECONDED THE MOTION.

9:20:55 PM

Councilmember Johnson stated the budget preparation process has been good this year and many of the concerns and questions raised by the Council were adequately addressed. Councilmembers Peterson and Lisonbee agreed and Councilmember Gailey stated the budget retreat was very helpful and productive.

9:21:45 PM

Mr. Marshall reported he received the certified tax rate from Davis County today; property values in Syracuse City increased by approximately 7.27 percent over the past year, which caused the certified tax rate to decrease to .001639 so that the City will receive the same amount of property tax revenue as in past year.

9:22:16 PM

Mayor Palmer stated there has been a motion and second to adopt the proposed resolution and he called for a vote; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

9:22:47 PM

13. Proposed Resolution R15-14 adopting the Fiscal Year 2016-2020 Employee Compensation Plan and Fiscal Year 2015-2016 Wage Scale.

A staff memo from the Finance Director referenced the attached proposed changes to the 2016 – 2020 employee compensation plan and the fiscal year 2015 – 2016 wages scale. All recommended changes to the employee compensation plan and the wage scale are highlighted in red. Any questions regarding this item can be directed at City Manager Brody Bovero or Finance Director Steve Marshall. The recommended changes to the employee compensation plan include changing to an annual merit based raise of 2.3% of payroll versus the current plan that alternates between raises and bonuses at a 2.75% rate. The other big change includes an employee development program that would encourage employees to obtain additional skills and training. The city would pay up to 3.5% for the additional training. There are limitations to who is eligible and how often it can be achieved. City Administration is recommending adding four additional job classifications to the employee wage scale. They include:

- Code Enforcement Officer – part-time
- Administration Professional – part-time
- Custodian – part-time
- Court Clerk – part-time

The Code Enforcement, Administration Professional, and Court Clerk I positions all have a full-time equivalent. We have matched the pay scale of the proposed part time positions to the full-time positions. We performed a salary benchmark for the part-time Custodian position and have set the wage scale to match the wages to the 60th percentile of comparative cities. We are also recommending eliminating the Intern under the part-time classification because it is also included under seasonal/temporary.

9:23:08 PM

Finance Director Marshall reviewed the portion of the staff memo pertaining to the wage scale. City Manager Bovero reviewed the portion of the staff memo pertaining to the employee compensation plan.

9:27:06 PM

Councilmember Lisonbee inquired as to the reason staff is recommending hiring an in-house custodial rather than contracting for custodial services. Mr. Marshall stated there has been a struggle to achieve the level of service the City is seeking via a contract, in particular in the Community Center. Staff has determined to use a custodial service for the majority of the City's facilities and use the in-house employee for the Community Center. This may not result in a cost savings for custodial services because many of the preliminary bids are nearly double what the City is currently paying; this may be due

to the fact that the City is seeking a higher level of service and it has been a number of years since the City has solicited bids for custodial services.

9:29:07 PM

COUNCILMEMBER PETERSON MADE A MOTION TO ADOPT RESOLUTION 15-14 ADOPTING THE UPDATES TO THE EMPLOYEE COMPENSATION PLAN AND THE FISCAL YEAR 2015-2016 WAGE SCALE. COUNCILMEMBER GAILEY SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

9:29:57 PM

14. Proposed Resolution R15-15 amending the Syracuse City Consolidated Fee Schedule by making adjustments throughout.

A staff memo from the Finance Director explained staff periodically reviews and recommends changes to the consolidated fee schedule. I am recommending the changes outlined in red in Exhibit A. These changes include:

- Update to public safety impact fees to coincide with our public safety impact fee analysis.
- Increase our late fee to $20.00 for utility account past due balances.
- Increase our utility bill advertising fee to $850.00 for a full page color advertisement.
- Increase the sewer rate fee by $3.00 to $20.80 per month.
- Implement a sewer excess gallon fee for commercial businesses to $1.55 per 1000 gallons over 5,500 gallons.
- Add a fee for a cemetery certificate replacement of $10.00.
- Delete newsletter advertising fees since we don't allow advertisements in the newsletter since it was revamped and condensed.
- Changes to some post office supply charges to reflect the correct amount charged.

9:30:18 PM

Councilmember Lisonbee noted the packet materials for this item indicate it is a public hearing, but the agenda language does not include public hearing language; she asked if a public hearing was noticed. Mr. Bovero encouraged the

Council to proceed as if a public hearing has been noticed and if is found that public hearing was not noticed, it will be noticed and an item will be added to a future agenda for the purpose of following noticing requirements.

9:30:38 PM

Finance Director Marshall reviewed the staff memo.

9:35:04 PM

Mayor Palmer opened the public hearing.

9:35:18 PM

TJ Jensen stated there was a comment during the public comment portion of the meeting regarding potentially waiving water over-use fees as a result of the water contamination issue. He conducted some research with Mr. Marshall a few years back and found that the average household uses 6,500 gallons and the billing system bills residents for the first 8,000 gallons so most users should not notice an increase in costs. He stated that he feels the City needs to consider amending the fee schedule for water usage in the City to cover the amount of water people actually use.

9:36:24 PM

There were no additional persons appearing to be heard and Mayor Palmer closed the public hearing.

9:36:32 PM

COUNCILMEMBER PETERSON MADE A MOTION TO ADOPT RESOLUTION 15-15AMENDING THE SYRACUSE CITY CONSOLIDATED FEE SCHEDULE BY MAKING ADJUSTMENTS THROUGHOUT. COUNCILMEMBER GAILEY SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

9:37:14 PM

15. Proposed Resolution R15-17 authorizing and directing the participation of Syracuse City in the public employee's retirement system and the public safety retirement system of the Utah retirement systems for fiscal year 2015-2016.

A staff memo from Finance Director Marshall explained the City is required by Utah Code Title 49, Chapters 11-15 to pay retirement on our full-time employees. Each year, the City is required to certify the contribution rates that will be paid for retirement to Utah Retirement Systems (URS) for our full-time employees. These rates vary depending on which system the employees are in and when they were hired. We currently participate in 9 different retirement programs offered by URS. This includes our police, fire, and administrative staff as well as tier I and tier II employees.

9:37:25 PM

Mr. Marshall reviewed his staff memo.

9:39:03 PM

Councilmember Gailey asked if this resolution is tied to the change in State Code that requires that the City show retirement costs as a liability in the general fund. Mr. Marshall stated it is somewhat different and plans to discuss retirement liabilities with the Council in the near future. He noted the URS is 81 percent funded at this time and eventually they will become fully funded and as that gap closes the City's liability will decrease.

9:42:54 PM

COUNCILMEMBER PETERSON MADE A MOTION TO ADOPT RESOLUTION 15-17 AUTHORIZING AND DIRECTING THE PARTICIPATION OF SYRACUSE CITY IN THE PUBLIC EMPLOYEE'S RETIREMENT SYSTEM AND THE PUBLIC SAFETY RETIREMENT SYSTEM OF THE UTAH RETIREMENT SYSTEMS FOR FISCAL YEAR 2015-2016. COUNCILMEMBER LISONBEE SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

9:43:31 PM

16. Authorize Administration to execute contract with Utah Local Government Trust for Insurance Services.

A staff memo from Finance Director Marshall referred to the attached garbage RFP bid summary sheet and supporting documentation. Administration put out a request for proposal (RFP) for property, auto, and general insurance services. It has been a while since the City has requested an RFP for this type of service. It is always good practice to place an RFP every 3-5 years for this type of service. The RFP was noticed in the local newspaper for 2 consecutive weeks (March

22nd and March 29th) and was given an 8 week period for bidders to submit a bid by the deadline that closed on May 15, 2015. The bid requested that each firm provide a cover letter, summary of qualifications, a summary of the executive team, loss prevention services, coverage detail, and references from other cities. The bid also requested that for general liability, a quote be given for both a 2 million dollar and a 5 million dollar policy. The bid gave information on limits for property coverage and a detailed list of automobiles that were to be covered on the policy. The RFP also specified that we would grade the bidding firms on the following criteria:

- *Experience and qualification servicing the public sector*
- *Service Team – experience, expertise, and education*
- *Loss Prevention Ideas*
- *Frequency of certified appraisals for property values*
- *AM Best Ratings*
- *Cost, Coverage, and overall approach*
- *Quality of References*

The City received one bid from the Utah Local Government Trust (ULGT). This firm is our current carrier for insurance services. ULGT has the experience necessary to provide insurance coverage to Syracuse City. They have provided insurance to our City for several years and they also provide insurance to 87% of all Utah cities and towns. They have a lot of experience with their service team. They have several loss prevention programs and trainings they provide throughout the year. They also have an appraisal program that appraises all of our assets once every five years. The AM best ratings are considered excellent or superior and the cost and coverage that is provided is competitive. ULGT's bid gives us a higher coverage limit of $5 million dollars for the same cost as currently provided at the $2 million dollar limit. The references provided from Riverton, Springville, Vernal, and Plain City were all positive. I am also aware of other Cities like West Point, Woods Cross, and Clinton who all have mentioned positive comments about the insurance coverage through ULGT. Based upon staff's experience with ULGT and review of the bid submitted as noted above, Mr. Marshall recommends awarding the insurance contract to Utah Local Government Trust. With this bid, the City's insurance premiums will stay the same and our general liability insurance limit will increase from $2 million dollars to $5 million dollars per occurrence. Here is a summary of costs:

- General Liability = $80,215

- Property Insurance = $41,548
- Auto Insurance = $29,971
- **Total Insurance = $151,734**

Staff is working on assembling a contract and is asking that the City Council authorize administration to execute this contract based on the parameters set forth in the bid documents.

9:43:41 PM

Mr. Marshall reviewed his staff memo.

9:46:28 PM

Councilmember Peterson stated he has always assumed the ULGT covers all cities and was surprised to learn they only cover 87 percent. He asked who the other cities use. Mr. Marshall stated there are some large carriers and smaller individual carries; Utah Risk Management Association (URMA) is a provider.

9:47:01 PM

Councilmember Lisonbee stated when she attended the recent Utah League of Cities and Towns (ULCT) Conference she spoke with officials from cities nearby and many of them use other providers as they have been moving away from using the ULGT. She would like for the City to begin the bidding process sooner next time and she would like the contract bid again next year; she heard from a potential bidder who wanted to bid, but felt that he did not have sufficient time to submit a proposal.

9:47:59 PM

COUNCILMEMBER GAILEY MADE A MOTION TO AUTHORIZE ADMINISTRATION TO EXECUTE CONTRACT WITH UTAH LOCAL GOVERNMENT TRUST FOR INSURANCE SERVICES. COUNCILMEMBER PETERSON SECONDED THE MOTION; ALL VOTED IN FAVOR. Councilmember Duncan was not present when this vote was taken.

9:48:25 PM

17. Councilmember reports.

At each meeting the Councilmembers provide reports regarding the meetings and events they have participated in since the last City Council meeting. Councilmember Peterson's report began at 9:48:29 PM. He was followed by Councilmembers Johnson and Lisonbee. Councilmember Gailey indicted he has nothing to report. Councilmember Duncan was not present to provide a report.

9:50:05 PM

18. Mayor's Report.

Mayor Palmer's report began at 9:50:05 PM.

9:50:12 PM

19. City Manager report

City Manager Bovero's report began at 9:50:18 PM.

At 9:50:59 PM COUNCILMEMBER JOHNSON MADE A MOTION TO ADJOURN. COUNCILMEMBER LISONBEE SECONDED THE MOTION; ALL VOTED IN FAVOR.

_____ _____

Terry Palmer
Mayor

Cassie Z. Brown, CMC
City Recorder

Date approved: _____

DRAFT

Minutes of the Syracuse City Redevelopment Agency Special Meeting, June 9, 2015.

Minutes of the Special Meeting of the Syracuse City Redevelopment Agency held on June 9, 2015, at 9:51 p.m., in the Council Chambers, 1979 West 1900 South, Syracuse City, Davis County, Utah.

Present: Members: Mike Gailey
Craig A. Johnson
Karianne Lisonbee
Douglas Peterson

Mayor Terry Palmer
City Manager Brody Bovero

Excused: Boardmember Brian Duncan
City Recorder Cassie Z. Brown

City Employees Present:
Finance Director Steve Marshall
Public Works Director Robert Whiteley
City Attorney Clint Drake
Fire Chief Eric Froerer
Police Chief Garret Atkin
Parks and Recreation Director Kresta Robinson
Acting Community Development Director Noah Steele

9:51:20 PM

1. Meeting Called to Order/Adopt Agenda

Mayor Palmer called the meeting to order at 9:51 p.m. as a special meeting, with notice of time, place, and agenda provided 24 hours in advance to the newspaper and each Boardmember.

BOARDMEMBER LISONBEE MADE A MOTION TO ADOPT THE AGENDA. BOARDMEMBER JOHNSON SECONDED THE MOTION; ALL VOTED IN FAVOR. Boardmember Duncan was not present when this vote was taken.

9:51:38 PM

2. Public Hearing – Proposed Resolution RDA15-01 adopting the annual budget for Fiscal Year (FY) 2015-2016.

A memo from Finance Director Marshall explained the City Council and Mayor are the acting board members for both the RDA and the MBA. Each is a separate legal entity and each has a separate budget proposal to go along with proposed resolutions RDA15-01 and MBA15-01. The RDA board oversees two RDA areas (town center and 750 West) and the SR-193 EDA area. This is the second year of tax increment for the SR-193 EDA area. There have not been any changes made since the tentative budget was approved on May 12, 2015. This is the last council meeting we have to adopt a final budget before the June 22 deadline provided by State Law.

9:51:54 PM

Mr. Marshall reviewed his staff memo.

9:52:50 PM

Mayor Palmer then convened the public hearing.

9:53:05 PM

There being no persons appearing to be heard, Mayor Palmer closed the public hearing.

9:53:06 PM

BOARDMEMBER LISONBEE MADE A MOTION TO ADOPT PROPOSED RESOLUTION RDA15-01 ADOPTING THE ANNUAL BUDGET FOR FISCAL YEAR (FY) 2015-2016. BOARDMEMBER GAILEY SECONDED THE MOTION; ALL VOTED IN FAVOR. Boardmember Duncan was not present when this vote was taken.

At 9:53:20 PM p.m. BOARDMEMBER GAILEY MADE A MOTION TO ADJOURN. BOARDMEMBER PETERSON SECONDED THE MOTION; ALL VOTED IN FAVOR.

_____ _____

Terry Palmer
Mayor

Cassie Z. Brown, CMC
City Recorder

Date approved: _____

DRAFT

Minutes of the Syracuse City Municipal Building Authority Special Meeting, June 9, 2015

Minutes of the Special Meeting of the Syracuse City Municipal Building Authority held on June 9, 2015 at p.m., in the Council Chambers, 1979 West 1900 South, Syracuse City, Davis County, Utah.

Present: Trustees: Mike Gailey
Craig A. Johnson
Karianne Lisonbee
Douglas Peterson

Mayor Terry Palmer
City Manager Brody Bovero
City Recorder Cassie Z. Brown

Excused: Trustee Brian Duncan
City Recorder Cassie Z. Brown

City Employees Present:
Finance Director Steve Marshall
Public Works Director Robert Whiteley
City Attorney Clint Drake
Fire Chief Eric Froerer
Police Chief Garret Atkin
Parks and Recreation Director Kresta Robinson
Acting Community Development Director Noah Steele

9:53:35 PM

1. Meeting Called to Order/Adopt Agenda.

President Palmer called the meeting to order at 9:53 p.m. as a special meeting, with notice of time, place, and agenda provided 24 hours in advance to the newspaper and each Trustee.

9:53:35 PM

TRUSTEE LISONBEE MADE A MOTION TO ADOPT THE AGENDA. TRUSTEE GAILEY SECONDED THE MOTION; ALL VOTED IN FAVOR. Trustee Duncan was not present when this vote was taken.

9:53:49 PM

2. Public Hearing – Proposed Resolution MBA 154-01 adopting the annual budget for the Fiscal Year (FY) 2015-2016.

A memo from Finance Director Marshall explained the City Council and Mayor are the acting board members for both the RDA and the MBA. Each is a separate legal entity and each has a separate budget proposal to go along with proposed resolutions RDA15-01 and MBA15-01. The RDA board oversees two RDA areas (town center and 750 West) and the SR-193 EDA area. This is the second year of tax increment for the SR-193 EDA area. There have not been any changes made since the tentative budget was approved on May 12, 2015. This is the last council meeting we have to adopt a final budget before the June 22 deadline provided by State Law.

9:53:54 PM

Mr. Marshall reviewed his staff memo.

9:54:37 PM

Mayor Palmer then convened the public hearing.

9:54:46 PM

There being no persons appearing to be heard, Mayor Palmer closed the public hearing.

9:54:46 PM

TRUSTEE LISONBEE MADE A MOTION TO ADOPT PROPOSED RESOLUTION MBA15-01 ADOPTING THE ANNUAL BUDGET FOR THE FISCAL YEAR 2015-2016. TRUSTEE PETERSON SECONDED THE MOTION; ALL VOTED IN FAVOR. Trustee Duncan was not present when this vote was taken.

9:55:00 PM

At 9:54:59 PM TRUSTEE LISONBEE MADE A MOTION TO ADJOURN. TRUSTEE JOHNSON SECONDED THE MOTION; ALL VOTED IN FAVOR. Trustee Duncan was not present when this vote was taken.

_____ _____

Terry Palmer
President

Cassie Z. Brown, CMC
City Recorder

Date approved: _____

CITY COUNCIL AGENDA

July 14, 2015

Agenda Item **#6.0**

Final Subdivision Plan
Still Water Lake Estates Phase 7
3669 S Bayview Drive

Factual Summation

Zone:	R-1 Cluster Residential
Applicant:	Irben Development
Total Acreage:	5.5
Requested Lots:	28 lots

Public Meeting Outline

The City has been working with the developer on this project for approximately three and one-half years. The project outline is as follows:

Sales Contract of City Property
City Council January 31, 2012

Annexation of Irben Property
City Council May 8, 2012

General Plan/Rezone Approval
City Council June 26, 2012

Sketch Plan Reviews-(30 ski lots, 288 Town Homes)
Planning Commission July 17, 2012-**Tabled**
August 7, 2012-**Tabled** (dead end street length, county canal crossing)

Annexation of Weaver Property
City Council March 12, 2013

Sketch Plan Amendment-(30 ski lots, 202 cottage lots, 168 Town Homes=400 units)
Planning Commission June 4, 2013- **Tabled** to modify lots to minimum 5,000 sq. ft., 55 feet frontage, side setbacks of 8 feet, reduce number of entrances on Gentile, and replace flag lot with cul-de-sac.
August 6, 2013- **Approved Sketch**, conditioned upon removing Phase 8 if purchased by UDOT.

Sketch Plan Amendment-(30 ski lots, 134 cottage lots, 54 courtyard lots, 56 town homes)

Planning Commission October 16, 2013-**Denied** for deviating from previous approval which required 5,000 sq. ft., 55 feet of frontage, and 8 ft side setbacks.

Preliminary Plan-(30 ski lots, 165 cottage lots)

Planning Commission February 18, 2014- **Tabled** to review previous approvals/requirements

March 4, 2014-**Approved**

Conditional Use Approval

Planning Commission May 6, 2014-**Approved**

City Council May 14th-**Approved**

Final Plan

Planning Commission July 7, 2015

Background

This application is for final plan approval of the Still Water Lake Estates subdivision phase 7 located on 3669 S Bayview Drive. This proposal consists of 28 single family homes. The overall development is 86.55 acres with a net density of 2.78 DU/AC. Please see staff reports for outstanding items.

Attachments

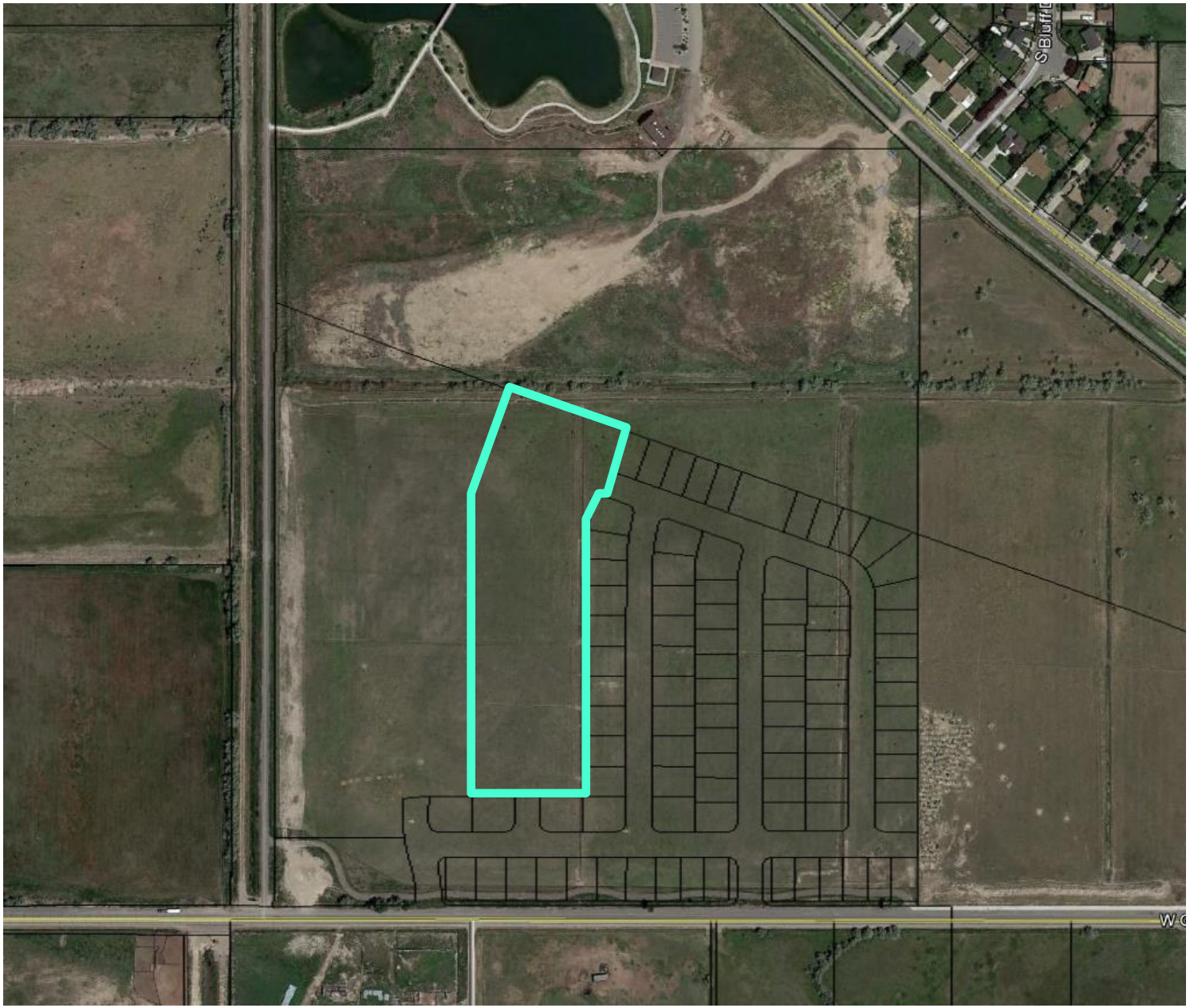
- Aerial
- Final Plan
- Staff Reviews

Suggested Motions

Planning Commission Recomendation

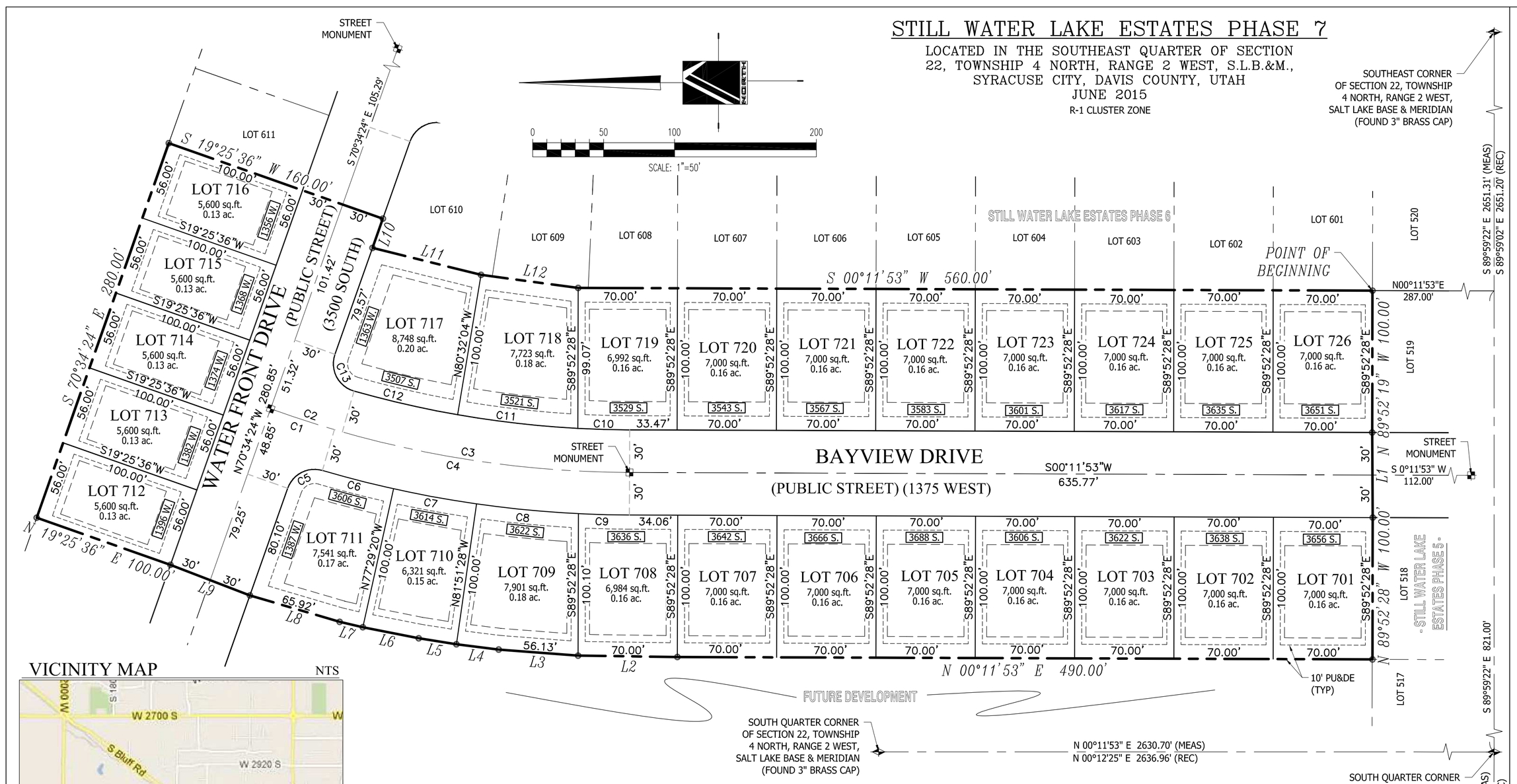
The Planning Commissioned moved to recommend approval to the City Council of the Still Water Lake Estates Phase 7 Final Plan, Irben Development, property located at approximately 3669 S Bayview Dr, subject to all applicable requirements of the City's municipal codes and City staff reviews.

Still Water Lake Estates
3669 S Bayview Dr



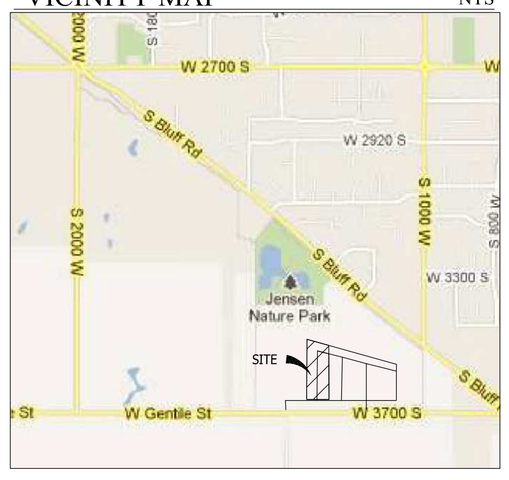
STILL WATER LAKE ESTATES PHASE 7

LOCATED IN THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 2 WEST, S.L.B.&M., SYRACUSE CITY, DAVIS COUNTY, UTAH
JUNE 2015
R-1 CLUSTER ZONE



VICINITY MAP

NTS



LEGEND

- PROPERTY LINE
- LOT LINE
- CENTER / SECTION LINE
- STREET RIGHT-OF-WAY LINE
- EASEMENT LINE
- ADJACENT PROPERTY LINE
- SECTION CORNER
- PU&DE — PUBLIC UTILITY & DRAINAGE EASEMENT
- SET 5/8" REBAR WITH A ORANGE PLASTIC CAP, OR NAIL & WASHER STAMPED PINNACLE ENG. & LAND SURV.
- N/R — NON-RADIAL
- NEW CENTERLINE MONUMENT
- CA — COMMON AREA - SEE CC&R'S

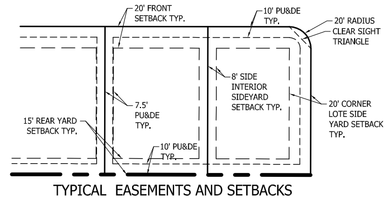
"Utilities shall have the right to install, maintain and operate their equipment above and below ground and all other related facilities within the Public Utility Easements identified on this plat map as may be necessary or desirable in providing utility services within and without the lots identified herein, including the right of access to such facilities and the right to require removal of any obstructions including structures, trees and vegetation that may be placed within the PUE. The utility may require the lot owner to remove all structures within the PUE at the lot owner's expense, or the utility may remove such structures at the lot owner's expense. At no time may any permanent structures be placed within the PUE or any other obstruction which interferes with the use of the PUE without the prior written approval of the utilities with facilities in the PUE."

LINE TABLE

LINE	LENGTH	BEARING
L1	60.00	S89°37'20"W
L2	70.00	N00°47'40"E
L3	56.13	N04°21'28"E
L4	30.06	N07°09'49"E
L5	26.90	N09°01'06"E
L6	40.19	N11°12'08"E
L7	16.76	N13°03'26"E
L8	65.92	N16°25'07"E
L9	60.02	N21°02'29"E
L10	21.85	N70°34'24"W
L11	78.81	S13°57'27"W
L12	69.10	S07°40'02"W

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	CHORD BRG	CHORD
C1	47.30	750.00	3°36'49"	S18°07'08"W	47.30
C2	53.13	750.00	4°03'33"	S17°53'47"W	53.12
C3	205.10	750.00	15°40'07"	S08°01'56"W	204.46
C4	210.93	750.00	16°06'51"	S08°15'18"W	210.24
C5	30.33	20.00	86°53'08"	N27°07'50"W	27.51
C6	51.75	780.00	3°48'04"	S14°24'42"W	51.74
C7	59.48	780.00	4°22'08"	S10°19'36"W	59.46
C8	72.20	780.00	5°18'13"	S05°29'26"W	72.18
C9	35.95	780.00	2°38'27"	S01°31'06"W	35.95
C10	36.55	720.00	2°54'31"	S01°39'08"W	36.55
C11	85.31	720.00	6°47'20"	S06°30'04"W	85.26
C12	75.03	720.00	5°58'16"	S12°52'52"W	75.00
C13	32.66	20.00	93°33'36"	S62°38'48"W	29.15



TYPICAL EASEMENTS AND SETBACKS

CENTURYLINK

APPROVED THIS _____ DAY OF _____, 20___, BY A REPRESENTATIVE OF QWEST COMMUNICATIONS.

QWEST COMMUNICATIONS REPRESENTATIVE

QUESTAR GAS COMPANY

APPROVED THIS _____ DAY OF _____, 20___, BY A REPRESENTATIVE OF QUESTAR GAS COMPANY.

QUESTAR GAS COMPANY REPRESENTATIVE

ROCKY MOUNTAIN POWER

APPROVED THIS _____ DAY OF _____, 20___, BY A REPRESENTATIVE OF ROCKY MOUNTAIN POWER.

ROCKY MOUNTAIN POWER REPRESENTATIVE

CITY ATTORNEY'S APPROVAL

APPROVED THIS _____ DAY OF _____, 20___, BY THE SYRACUSE CITY ATTORNEY.

SYRACUSE CITY ATTORNEY

PLANNING COMMISSION APPROVAL

APPROVED THIS _____ DAY OF _____, 20___, BY THE SYRACUSE CITY PLANNING COMMISSION.

SYRACUSE CITY PLANNING COMMISSION

CITY ENGINEER'S APPROVAL

APPROVED THIS _____ DAY OF _____, 20___, BY THE SYRACUSE CITY ENGINEER.

SYRACUSE CITY ENGINEER

CITY COUNCIL APPROVAL

APPROVED THIS _____ DAY OF _____, 20___, BY THE SYRACUSE CITY COUNCIL.

ATTEST:

SYRACUSE CITY RECORDER

SYRACUSE CITY MAYOR

SURVEYOR'S CERTIFICATE

I, STEPHEN J. FACKRELL DO HEREBY CERTIFY THAT I AM A LICENSED LAND SURVEYOR, AND THAT I HOLD CERTIFICATE NO. 191517 AS PRESCRIBED UNDER LAWS OF THE STATE OF UTAH. I FURTHER CERTIFY THAT BY AUTHORITY OF THE OWNERS, I HAVE MADE A SURVEY OF THE TRACT OF LAND SHOWN ON THIS PLAT AND DESCRIBED BELOW, AND HAVE SUBDIVIDED SAID TRACT OF LAND INTO LOTS, HEREAFTER TO BE KNOWN AS: STILL WATER LAKE ESTATES PHASE 7 AND THAT THE SAME HAS BEEN CORRECTLY SURVEYED AND STAKED ON THE GROUND AS SHOWN ON THIS PLAT. I FURTHER CERTIFY THAT ALL LOTS MEET FRONTAGE WIDTH AND AREA REQUIREMENTS OF THE APPLICABLE ZONING ORDINANCES.

BOUNDARY DESCRIPTION

PART OF THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 2 WEST, SALT LAKE BASE AND MERIDIAN, U.S. SURVEY, BEGINNING AT THE SOUTHEAST CORNER OF STILL WATER LAKE ESTATES PHASE 6, SAID POINT BEING LOCATED SOUTH 89°59'22" EAST 821.00 FEET ALONG SECTION LINE AND NORTH 00°11'53" EAST 287.00 FEET FROM THE SOUTH QUARTER CORNER OF SAID SECTION 22, AND RUNNING THENCE NORTH 89°52'19" WEST 100.00 FEET; THENCE SOUTH 89°37'20" WEST 60.00 FEET; THENCE NORTH 89°52'28" WEST 100.00 FEET; THENCE NORTH 00°11'53" EAST PARALLEL WITH QUARTER SECTION LINE 490.00 FEET; THENCE NORTH 00°47'40" EAST 70.00 FEET; THENCE NORTH 04°21'28" EAST 56.13 FEET; THENCE NORTH 07°09'49" EAST 30.06 FEET; THENCE NORTH 09°01'06" EAST 26.90 FEET; THENCE NORTH 11°12'08" EAST 40.19 FEET; THENCE NORTH 13°03'26" EAST 16.76 FEET; THENCE NORTH 16°25'07" EAST 65.92 FEET; THENCE NORTH 21°02'29" EAST 60.02 FEET; THENCE NORTH 19°25'36" EAST 100.00 FEET; THENCE SOUTH 70°34'24" EAST 280.00 FEET; THENCE SOUTH 19°25'36" WEST 160.00 FEET; THENCE NORTH 70°34'24" WEST 21.85 FEET; THENCE SOUTH 13°57'27" WEST 78.81 FEET; THENCE SOUTH 07°40'02" WEST 69.10 FEET; THENCE SOUTH 00°11'53" WEST 560.00 FEET TO THE POINT OF BEGINNING.

CONTAINING 240,351 SQ. FT. (5.52 ACRES) - 26 LOTS

DATE

STEPHEN J. FACKRELL
LICENSE NO. 191517

OWNER'S DEDICATION

We the undersigned owner(s) of the herein described tract of land, do hereby set apart and subdivide the same into lots, parcels and public streets as shown hereon and name said tract,

STILL WATER LAKE ESTATES PHASE 7

and do hereby grant and dedicate a perpetual right and easement over, upon and under the lands designated hereof as public utility and drainage easements, the same to be used for the installation maintenance and operation of public utility service line, storm drainage facilities, irrigation canals or for the perpetual preservation of water channels in their natural state whichever is applicable as may be authorized by the governing authority, with no buildings or structures being erected within such easements. And also grant and dedicate unto all owners of lots upon which private utility easements as shown hereon, for the purpose of perpetual maintenance and operation.

In witness whereof _____ have hereunto set _____ this day of _____ A.D., 20____.

WOODSIDE HOMES OF UTAH LLC
RYAN ORTMAN, DIVISION PRESIDENT

ACKNOWLEDGMENT

STATE OF UTAH)
COUNTY OF DAVIS)

ON THE____DAY OF _____A.D., 20___, PERSONALLY APPEARED BEFORE ME, THE UNDERSIGNED NOTARY PUBLIC, IN AND FOR SAID COUNTY OF DAVIS IN SAID STATE OF UTAH, THE SIGNER ( ) OF THE ABOVE OWNER'S DEDICATION, ____IN NUMBER, WHO DULY ACKNOWLEDGED TO ME THAT_____ SIGNED IT FREELY AND VOLUNTARILY AND FOR THE USES AND PURPOSES THEREIN MENTIONED.

MY COMMISSION EXPIRES: _____

NOTARY PUBLIC
RESIDING IN DAVIS COUNTY

STILL WATER LAKE ESTATES PH. 7

LOCATED IN THE SOUTHEAST QUARTER OF SECTION 22, TOWNSHIP 4 NORTH, RANGE 2 WEST, S.L.B.&M., SYRACUSE CITY, DAVIS COUNTY, UTAH

PINNACLE Engineering & Land Surveying, Inc.
2720 North 350 West, Suite #108
LAYTON, UT 84041
Phone: (801) 773-1910
Fax: (801) 773-1925

DAVIS COUNTY RECORDER

ENTRY NO._____FEE PAID_____FILED FOR RECORD AND RECORDED THIS _____ DAY OF _____, 20___AT _____ IN BOOK _____ OF OFFICIAL RECORDS PAGE _____

DAVIS COUNTY RECORDER

BY _____
DEPUTY RECORDER

12-003

SYRACUSE
EST. CITY 1935

Planner Final Subdivision Review

Subdivision: Still Water Lake Estates Phase 7 **Date**: June 29, 2015

Completed By: Jenny Schow, City Planner **Updated**: July 2, 2015

8-6-10 Final Plat

Please review and amend the following items:

1. Amend site triangle to 40' feet on the typical easement diagram
2. Update addressing to that submitted by the city.

Items required for Preconstruction:

1. Construction Drawing Prints and PDF files
2. Schedule a preconstruction meeting
3. Bond estimate using the City template
4. Final Inspection Fees as calculated in the approved bond estimate
5. Offsite Improvement Agreement
6. BMP Facilities Maintenance Agreement (Parcel A)
7. Streetlight Agreement
8. SWPPP NOI
9. SWPPP City Permit
10. Fugitive Dust Control Plan

Items required for Recording:

1. Escrow Agreement
2. Water Shares
3. Title Report - must be updated within 30 days or recording
4. Recording fees: $37/page +$1/lot and any common space as well as $1/land-owner signatures over two

Still Water Lake Estates Subdivision Phase 7

Bayview Drive & Water Front Drive

Engineer Final Plan Review

Completed by Brian Bloemen on July 2, 2015

Below are the engineering comments for the final plan review of the Still Water Lake Estates Subdivision Phase 7.

Plans:

1. Contact North Davis Sewer District for approval on connections to District mains.

If you have any further comments or questions please feel free to contact me at 801-614-9630.

Sincerely,

Brian Bloemen, P.E.
City Engineer

TO: Community Development, Attention: Jenny Schow
FROM: Jo Hamblin, Fire Marshal
RE: Still Water Estates Phase 7

DATE: June 25, 2015

I have reviewed the plan for the above referenced project. The Fire Prevention Division of this department has the following comments/concerns.

1. Fire hydrants and access roads shall be installed prior to construction of any buildings. All hydrants shall be placed with the 4 ½" connection facing the point of access for Fire Department Apparatus. Provide written assurance that this will be met.

2. Prior to beginning construction of any buildings, a fire flow test of the new hydrants shall be conducted to verify the actual fire flow for this project. The Fire Prevention Division of this department shall witness this test and shall be notified a minimum of 48 hours prior to the test.

These plans have been reviewed for Fire Department requirements only. Other departments must review these plans and will have their requirements. At this time the Fire Department has no concerns regarding fire protection or access. This review by the Fire Department must not be construed as final approval from Syracuse City.

Sincerely,

Jo Hamblin
Deputy Chief/ Fire Marshal
Syracuse City Fire Department

1869 South 3000 West, Syracuse, Utah 84075
801-614-9614 (Station)
801-776-1976 (Fax)

CITY COUNCIL AGENDA

July 14, 2015

Agenda Item #7 Code Amendment to Title VIII pertaining to Construction Specifications

Background

City code has not been updated since the City Council adopted the Engineering Standards and Specifications through resolution. This amendment is to rectify the conflicts that exist. Please see the attached proposal.

Attachments

- Proposed code amendment

Planning Commission Recommendation

The Planning Commission moved to recommend approval, to the City Council, of the code amendments to Title VIII pertaining to construction specifications as proposed on July 7, 2015.

ORDINANCE NO. 15-14

AN ORDINANCE AMENDING VARIOUS SECTIONS OF TITLE VIII OF THE SYRACUSE CITY MUNICIPAL CODE PERTAINING TO CONSTRUCTION SPECIFICATIONS.

WHEREAS, due to the pace of growth in the City there are from time to time small proposed changes to various City ordinances that are warranted; and

WHEREAS, these small proposed changes come to the attention of the Planning Commission through varied means including but not limited to questions, concerns or complaints from the general public and or from developers that are seeking clarification on the language in the City code; and

WHEREAS, the Planning Commission takes each question or concern under consideration and addresses it on case-by-case basis in a fair and judicious manner paying specific attention to the reasonableness and legality of the request as well as the reasonableness and legality of the City's own ordinances; and

WHEREAS, after such consideration Planning Commission will either support and sustain current ordinances as adopted or in other cases have staff research and address each proposed change and put forth amendments to existing ordinances; and

WHEREAS, the Planning Commission now hereby wishes to amend various sections of Title X to address such proposed changes.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF SYRACUSE CITY, STATE OF UTAH, AS FOLLOWS:

Section 1. **Amendment.** The following sections of Syracuse City Municipal Code are hereby amended as follows:

Exhibit A

Section 2. Severability. If any section, part or provision of this Ordinance is held invalid or unenforceable, such invalidity or unenforceability shall not affect any other portion of this Ordinance, and all sections, parts and provisions of this Ordinance shall be severable.

Section 3. Effective Date. This Ordinance shall become effective immediately after publication or posting.

PASSED AND ADOPTED BY THE CITY COUNCIL OF SYRACUSE CITY, STATE OF UTAH, THIS 14th DAY OF JULY, 2015.

SYRACUSE CITY

ATTEST:

Cassie Z. Brown, City Recorder

Mayor Terry Palmer

Voting by the City Council:

	"AYE"	"NAY"
Councilmember Peterson	___	_____
Councilmember Lisonbee	___	_____
Councilmember Duncan	___	_____
Councilmember Johnson	___	_____
Councilmember Gailey	___	_____

Chapter 8.45

CONSTRUCTION SPECIFICATIONS

Refer to the Syracuse City Engineering Standards and Construction Specifications adopted by the City Council through resolution.

~~Sections:~~

~~8.45.10 Earthwork.~~

~~(A) General Description. Excavation for street pavement and/or curb and gutter shall consist of the removal of all materials within the lines, grades and slopes shown on the plans or established by the City Engineer, including all earth, stone, loose rock, sand, clay, shale, hard pan, boulders, solid rock, stone blocks, roots, brush, trees, rubbish and all other materials of whatever nature that may be encountered within the lines, grades and slopes above described or that may be required in grading approaches to intersecting streets and alleys or in providing ditches at the ends of pipes, waterways and flumes.~~

~~(B) Compaction Control and Testing. Maximum density, as used in these specifications, shall be defined as the maximum density obtained in the laboratory by ASTM D-1557. In-place density test procedures shall be in accordance with ASTM D-2922 and ASTM D-3017.~~

~~It shall be the responsibility of the contractor to accomplish the specified compaction for backfill, fill, and other earthwork. It shall be the responsibil-ity of the contractor to control his operations by confirmation tests to verify and confirm that he has complied, and is complying at all times, with the requirements of these specifications concerning compaction, control, and testing.~~

~~The frequency of the contractor's confirmation tests shall be not less than as follows and each test location for trenches shall include tests for each~~

layer, type, or class of backfill from bedding to finish grade or as required by Inspector.

(1) Trenches.

(a) Open fields: two every 1,000 linear feet;

(b) Along dirt or gravel roads or off traveled right-of-way: two every 500 linear feet;

(c) Crossing paved roads: two locations along each crossing;

(d) Under pavement cuts or within two feet of pavement edges: one location every 400 linear feet;

(2) Structural backfill: one every 20 cubic yards;

(3) Embankment or fill: one every 200 cubic yards;

(4) Base material: one every 50 cubic yards.

Confirmation tests shall be paid by the contractor.

Copies of the test reports shall be submitted promptly to the Inspector. The contractor's tests shall be performed by a soils testing laboratory acceptable to the Inspector.

If compaction fails to meet the specified requirements, the contractor shall remove and replace the backfill at proper density or shall bring the density up to specified level by other means acceptable to the Inspector. Subsequent tests required to confirm and verify that the reconstructed backfill has been brought up to specified density shall be paid by the contractor. The contractor's confirmation tests shall be performed in a manner acceptable to the Inspector. Frequency of confirmation tests for remedial work shall be double that amount specified for initial confirmation tests.

(C) Stripping. On all portions of the work, where filling is required, the entire area shall first be stripped of all undesirable materials, as designated by the Inspector. The resulting surface, after the removal of all undesirable material, shall be scarified to the extent designated by the Inspector and brought to a uniform surface by means of graders or other suitable equipment, and shall be completed as provided in these specifications, before any embankment material is placed.

(D) Disposal of Excess Material. All excess or undesirable material that may be encountered in the work shall be disposed of by the contractor, in a manner approved by the Inspector, but it shall not be placed on other streets or alleys without the Inspector's approval nor on private property without the approval of the owner, which approval shall be obtained by the contractor in writing.

(E) Embankment. All excavated materials that have been approved by the Inspector for embankment purposes and that are needed for that purpose shall be used at the points designated by the Inspector and in the following manner:

(1) The embankment shall be built by depositing approved material, in approximately level, uniform layers, not exceeding six inches in thickness after compacting.

(2) The material in place at both ends of any embankment, or where net material is placed against material in place, shall be plowed into the new material as the work progresses and shall be thoroughly scarified and worked into the new material and brought to the proper elevation before rolling of the layer being placed is commenced.

(3) If the material as found in excavation is too wet, as determined by the Inspector, then it shall be permitted to dry out to the extent required before being used in the embankment; or the material may be placed to the proper thickness on the embankment and worked with satisfactory equipment until the quantity of moisture in the material has been reduced to that required for maximum compaction. If the material as found in excavation is too dry, as determined by the Inspector, then it shall be moistened to the extent required and worked with harrows or other suitable equipment until the moisture throughout the material is uniform and contains the proper percentage of moisture, as determined by the Inspector, for proper compaction.

(4) The embankment shall be built to the lines, grades, and slopes shown on the plans or established by the City Engineer.

(5) All embankments shall be compacted to 95 percent of maximum density (AASHO T-99 Test Procedure) unless otherwise specified by the City.

(F) Excavation Below Subgrade. If soft or otherwise undesirable material is found to exist at and below the subgrade elevation, then such material shall be removed to the extent and in the manner designated by the Engineer.

(G) Removal of, Building and/or Rebuilding of Existing Structures. Should it be found necessary to remove, build and/or rebuild existing pipelines,

flumes, monuments, manholes and other structures, or to reset metal covers and frames, etc., then said work shall be done as shown on the approved plans.

(H) Preparation of Subgrade. In excavating the required material, the work shall be so handled as to leave in place sufficient material above the finished subgrade elevation to provide for compaction in building the subgrade to the prescribed elevation.

After the materials have been excavated, as above described, then the subgrade shall be scarified, after which the material shall be accurately graded to the required form of the finished subgrade and rolled with approved rollers to compaction required. If additional moisture is required, in order to produce the compaction required, then the proper quantity shall be applied uniformly, either before or after scarifying. If necessary, the material shall be scarified after the water is applied, in order to obtain uniform distribution of moisture and bring the material to a suitable condition. All rocks, boulders, or other unsuitable material shall be removed. The quantity of material, and its distribution, before rolling, shall be such that when compacted the required form and elevation will be secured. All subgrade shall be compacted to 95 percent of maximum density (AASHO T-99 Test Procedure).

(I) Completed Subgrade. The completed subgrade shall accurately conform to the lines, grades and slopes shown on the plans or designated by the Engineer and shall be maintained in satisfactory condition by the contractor. No driving or wheeling will be permitted on an unprotected subgrade without the approval of the Inspector.

(J) Sub-Base. The depth of sub-base material shall be determined by soil exploration and load requirements. Such soil analysis shall be in accordance with acceptable engineering practices. [Code 1971 Appendix § 1.]

8.45.20 Surfacing and paving.

(A) General. This section covers the requirements for bituminous surface paving on roads. All streets shall be surfaced in accordance with the following:

(1) Sub-base as determined necessary upon analysis of soil characteristics and loads to be imposed on the pavement structure.

(2) Eight inch minimum crushed gravel base course over prepared subgrade.

(3) Three inch minimum compacted thickness plant mix asphalt surfacing on all streets.

(B) Base Course. Base for all streets shall consist of hard, durable particles or fragments of stone or gravel, screened or crushed to the required size and grading. The material shall be free from balls of clay, alkali, adobe or other deleterious matter, and shall conform to the following gradation when tested in accordance with AASHTO T-27 or ASTM C-136 and AASHTO T-11 or ASTM C-117.

Sieve Size	Percent Passing
1-1/8 inch	100
No. 4	38 – 65
No. 8	25 – 60
No. 30	10 – 40
No. 200	3 – 12

The material shall be deposited and spread in a uniform layer at optimum moisture content, without segregation of size, with such depth that when compacted in layer will have the required thickness.

Each layer shall be compacted for the full width and depth by rolling with a pneumatic roller weighing at least 10 tons. Alternate blading and rolling will be required to provide a smooth, even and uniformly compacted course true to cross-section and grade. Places inaccessible to rolling shall be compacted with mechanically operated hand tampers.

The gravel base shall be compacted to not less than 95 percent maximum dry density as determined by AASHTO T-180. Surfaces shall be true to the established grade with thickness being not less than one-fourth inch from the required layer thickness and with the surface elevation varying not more than three-eighths inch in 10 feet from the true profile and cross-section.

(C) Bituminous Prime Coat. The bituminous prime coat shall consist of an application of hot bituminous material on a previously prepared base course or other surface to be paved. Prior to the application of the prime coat, an inspection of the area to be coated will be made by the Inspector to determine its fitness to receive the bituminous priming material. That portion of the base course

prepared for immediate treatment, if considered excessively dry, shall be lightly sprinkled with water immediately in advance of the application to assure a uniform spread of the bituminous material.

Bituminous material used for the prime coat shall conform to the requirements for RC-250 and shall be applied at a temperature of 175 degrees Fahrenheit to 225 degrees Fahrenheit at a rate of 0.3 to 0.4 gallons per square yard by use of a bituminous distributor.

Immediately following the preparation of the base course, the bituminous material shall be applied by means of a bituminous distributor at the temperature previously specified. The priming material shall be so applied that uniform distribution is obtained at all points of the surface to be primed.

Following the application of prime material, the surface shall be allowed to dry for a period of not less than 48 hours without being disturbed, or for such additional period of time as may be necessary to attain penetration into the base course and drying out or evaporation of the volatiles from prime material. The contractor shall furnish and spread sufficient acceptable sand on all areas which show an excess of bituminous material to effectively blot up and cure the excess.

The primed surface shall be maintained by the contractor until the succeeding layer of pavement has been placed. During this interval, the contractor shall protect the primed surface against damage and shall repair all broken spots.

The bituminous distributor shall be so designed and equipped as to distribute the bituminous material uniformly at even heat on variable widths of surface at a readily determined and controlled rate with pressure range of 25 to 75 pounds per square inch.

The prime coat shall be applied only when the base course is dry or contains moisture not in excess of that which will permit uniform distribution and the desired penetration. It shall not be applied when atmospheric temperature is below 60 degrees Fahrenheit.

(D) Tack Coat. Transitions of asphalt to concrete or asphalt that exists and is to be paved over shall be tack coated with a Grade SS-Ih anionic emulsion at a rate of 0.10 gallons per square yard.

(E) Asphalt Concrete. Asphalt cement shall conform to the requirements for asphalt cement, AR-2000, AASHTO M-266 (AR-40) or ASTM D-3381. Mixing temperature shall be not lower than 275 degrees Fahrenheit, nor higher than 325 degrees Fahrenheit.

Mineral aggregate shall consist of coarse aggregate of crushed stone or gravel composed of hard, durable particles, sand, and a filler as specified in the following. The portion of the material retained on the No. 8 sieve shall be known as coarse aggregate and that portion passing a No. 8 sieve shall be known as fine aggregate. The composite material shall be uniformly graded from coarse to fine and shall meet the requirements of one of the following gradings when tested in accordance with AASHTO T-27 or ASTM C-136. Asphalt concrete shall be as indicated on the plans, but if not indicated shall be two course plant mix. Unless otherwise indicated on the plans, asphalt concrete having an overall thickness of over three inches shall be the two course plant mix.

Plant Mix, Two Course				Plant Mix, Single Course	
Base, 1-3/4 Inch Thick Minimum					
Seal, 3/4 Inch Thick Minimum				3 Inch Thick Minimum	
Sieve Size	Percent Passing	Sieve Size	Percent Passing	Sieve Size	Percent Passing
1/2"	100	1-1/4"	100	3/4"	100
3/8"	95 – 100	1"	87 – 100	1/2"	75 – 95
No. 4	50 – 70	3/4"	75 – 90	3/8"	65 – 85
No. 8	35 – 55	3/8"	55 – 72	No. 4	50 – 65
No. 30	15 – 30	No. 4	40 – 60	No. 8	35 – 50
No. 100	5 – 15	No. 8	30 – 50	No. 30	15 – 30

Plant Mix, Two Course				Plant Mix, Single Course	
Seal, 3/4-Inch Thick	Minimum	Base, 1-3/4 Inch Thick Minimum		3 Inch Thick Minimum	
Sieve Size	Percent Passing	Sieve Size	Percent Passing	Sieve Size	Percent Passing
No. 200	3—8	No. 30	15—30	No. 100	5—15
		No 100	5—15	No. 200	3—8
		No. 200	3—8		

At least 70 percent by weight of each size of aggregate included in the coarse aggregate shall consist of particles which have at least one rough, angular surface produced by crushing.

Coarse aggregate shall have a percentage of wear of not more than 50 at 500 revolutions, as determined by AASHTO T-96 or ASTM C-131.

Plasticity index of the aggregate shall be not more than two as determined by AASHTO T-90 or ASTM D-431B.

Sand may be added to the crusher or pit run product to supply any deficiency in the No. 8 mesh size, and filler may be added to supply any deficiency in No. 200 mesh material. If the aggregate contains an excess of sand, wasting will be required.

Finely powdered limestones, portland cement, or other artificially or naturally powdered mineral dust, acceptable to the Inspector, shall be used for filler.

(F) Construction Methods and Equipment. The methods employed in performing the work, all equipment, tools and machinery and other appliances used in handling the materials and executing the work shall be the responsibility of the contractor. The contractor shall make such changes in the methods employed and in the equipment used as are necessary whenever the bituminous mix being produced does not meet the specifications herein established.

(G) Spreading and Compaction. The bituminous mixtures shall be spread with self-propelled mechanical spreading and conditioning equipment capable of distributing at least a 12-foot width. The mixture shall be spread and struck off in such a manner that the finished surface shall result in a uniform smooth surface. The longitudal joints in succeeding courses shall be offset at least six inches transversely to avoid a vertical joint through more than one course.

The temperature of the bituminous mix shall be between 250 degrees Fahrenheit and 350 degrees Fahrenheit when placing. At no time will the temperature of the mix exceed 350 degrees Fahrenheit.

After the mixture has been spread the surface shall be rolled in the longitudinal direction commencing at the outside edge or lower side and preceding to the inner or higher side. Each pass of the roller shall overlap the preceding pass at least one-half the width of the roller. Rolling shall be continued until 95 percent of the laboratory density as determined in accordance with ASTM Designation D-1559 for the bituminous mixture being used has been obtained.

Rolling operations shall be conducted in such a manner that shoving or distortion will not develop beneath the roller.

The surface of the pavement, after compaction, shall be uniform and true to the established crown and grade. When tested with a 10-foot straight edge placed parallel to or perpendicular to the centerline of the pavement the surface of the pavement at any point shall not deviate from the lower edge of the straight edge by more than one-quarter of an inch. All high and low spots shall be remedied immediately by removing the wearing course material over the affected areas and replacing it with fresh, hot wearing course and surface finish material and immediately compacting it to conform with the surrounding area.

All traffic shall be kept off the completed surface for a minimum period of 24 hours.

(H) Weather Limitations. No bituminous surface shall be placed when the temperature of the air or road bed is 50 degrees Fahrenheit or below, during rainy weather, when the base is wet or during other unfavorable weather conditions as determined by the Inspector. The air temperature shall be measured in the shade.

(I) Restoring Pavements.

(1) Cutting and Removing. The pavement shall be cut vertically in neat lines with necessary tools by the contractor in such manner as not to damage the adjacent pavement. It shall be cut along straight lines forming the edges of the trench. The portion to be removed shall be broken up in such manner as not to damage the pavement outside the lines of the trench. If any pavement outside the lines of the trench is damaged, it shall be removed and restored as hereinafter provided at the contractor's expense. Concrete driveways, sidewalks and curb and gutter shall be removed in a similar manner. All waste material resulting from the above operations shall be immediately removed from the site of the work and all costs to the contractor for removing and disposing of said material shall be included in the unit prices bid under the appropriate items in the schedule.

(2) Temporary Pavement. Between street intersections, unless otherwise ordered by the Engineer, the backfilling shall be built up slightly above the surface of the pavement, oiled and maintained in good condition until the contractor is ready to place the new pavement, when the backfilling shall be removed to the subgrade elevation or bottom of the pavement. This work shall be done accurately to the proper elevation and all loose material removed. If any material is removed below the established subgrade elevation, said space shall be filled with similar material to that used for pavement base, at the contractor's expense, after which the new pavement shall be placed according to the City's specifications for the type of pavement that was removed, or such other type as may have been ordered to replace it.

At street intersections a temporary pavement, satisfactory to the Inspector, shall be placed and maintained in good condition until the contractor is ready to place the new pavement, when it shall be removed accurately to the subgrade elevation of the pavement and the new pavement placed according to the City's specifications for the type of pavement that was removed, or such other type of pavement as may have been ordered to replace it.

Such temporary bridges as may be required to properly handle the traffic during the progress of the construction shall be built, maintained and removed at the contractor's expense.

(3) Driveways, Sidewalk or Curb and Gutter. Where a trench is located under private driveways, sidewalk or curb and gutter, the subgrade shall be prepared in the same manner as described for pavement, and the concrete driveway, sidewalk or curb and gutter shall be rebuilt according to the City's specifications on file in the Inspector's office, for the type of driveway, sidewalk or curb and gutter that was removed, or such other type as may have been ordered to replace it.

(4) Repairing Damaged Pavement, Driveway, Sidewalk or Curb and Gutter. If any pavement, concrete driveway, sidewalk, or curb and gutter has been damaged outside the lines of the trench, while trenching, damaged areas shall be removed along straight lines and at right angles, and all cut surfaces shall be vertical, and removal and rebuilding of the damaged portion shall be done by the contractor at his own expense, and to the full satisfaction of the Engineer.

(J) Seal Coat.

(1) Slurry Seal. After allowing newly paved roads to sit for one year, the contractor shall apply a Type II slurry seal coat in accordance with approved specifications and standards. The City, at its option, may allow chip and seal application to satisfy requirements of this section. Slurry seal shall consist of mixing asphalt emulsion, aggregate, and water and spreading the mixture on dedicated roadway surfaces shown on the plat and plans approved by the City, as specified in these specifications and the special provisions, and as directed by the City Inspector.

(2) The materials for slurry seal immediately prior to mixing shall conform to the following requirements:

(a) Polymer Modified Asphalt Emulsion. Polymer emulsified asphalt shall be a quick traffic, quick cure (QT-QC) type, shall be a homogeneous brown color throughout and show no separation after thorough mixing, shall break and set on the aggregate within five minutes and shall be ready for cross traffic within 45 minutes. The polymer asphalt emulsion, upon standing undisturbed for a period of 24 hours, shall show no white or milky

colored substance on its surface and conform to the requirements in Table I.

Table I		
Test on Emulsion	**Test Method**	**Requirement**
Viscosity, SSF, @ 77 degrees F., sec	ASTM D 244	15—90
pH		1—3
Distillation Residue %, Minimum		60
Test on Residue from Distillation Test		
Penetration, 77 degrees F., 100g, 5s	ASTM D 5	40—80
Softening Point (Ring & Ball), degrees F.	ASTM	130 +
Ductility, 77 degrees F. (25 degrees C.), 5 cm/Min., Minimum	ASTM D 113	25
Fraass Breaking Point (degrees C.) min.	DIN 52012	-18

Water shall be potable, free of harmful soluble salts and shall be of such quality that the asphalt will not separate from the emulsion before the slurry seal is in place in the work.

Aggregate shall consist of sound, durable, crushed stone or crushed gravel and approved mineral filler. The material shall be free from vegetable matter and other deleterious substances. Aggregates shall be 100 percent crushed with no rounded particles, volcanic in origin and black in color. The percentage composition by weight of the aggregate shall conform to the following grading:

Type II Slurry	
Sieve Sizes	**Percentage Passing**
3/8" (9.5 mm)	100
No. 4 (4.75 mm)	90—100
No. 8 (2.36 mm)	65—90
No. 16 (1.18 mm)	40—70
No. 30 (600 µm)	25—50
No. 200 (75 µm)	5—15
Theoretical asphalt content, percent based on dry aggregate	7.5—13.5
Approximate application rate (pounds/square yard)	14—18

[Ord. 04-11; Code 1971 Appendix § 2.]

8.45.30 Portland cement concrete.

(A) Portland cement shall conform to the "Standard Specifications for Portland Cement," ASTM designation C-150-56 and subsequent revisions or addendums and shall be Type II. In areas where there is no exposure to sulfates in the soil or ground water, Type I cement is permissible.

(B) A certified analysis of the cement shall be presented to the City Engineer upon request.

(C) Cement content shall not be decreased because of the addition of certain admixtures.

(D) Fine and course aggregates shall conform to the specifications for concrete aggregates, ASTM Designation C-33-57, and subsequent revisions or addendums.

(E) The maximum size of the aggregate shall not be larger than one-fifth of the narrowest dimension between forms of the member for which the concrete is to be used, nor larger than three-fourths of the minimum clear spacing between reinforcing.

(F) Water used in mixing concrete shall be clean and free from strong acids, alkalies, oils, salts, organic materials, or other deleterious materials.

(G) The concrete shall contain a minimum of 6 bag (94#/bag) cement per cubic yard, and have a minimum compressive strength at 28 days of 4,000 psi maximum water content 0.048. Under no circumstance will a slump in excess of four inches be permitted.

(H) Not less than one test shall be made for each 150 cubic yards of concrete, nor less than one test for each day's concreting. These tests shall be made at the option of the Inspector.

(I) Proper mixing shall be accomplished either by truck or by stationary mixers.

(J) The place of deposit shall be prepared by adequate forming, proper compaction, necessary

drainage, and sufficiently moistened to minimize loss from the freshly placed concrete.

(K) Forms may be removed when the concrete has sufficient strength to carry its own weight and the loads upon it with safety (approximately 75 percent of design strength or at the discretion of the Engineer).

(L) Finishing shall provide a pleasant appearing surface, as well as a protective coat against weathering effects.

(M) All concrete surfaces shall be cured for a period of seven days by keeping the surface of the concrete continually visibly moist. An acceptable curing compound may be substituted for water where approved by the Inspector.

(N) In all cases the contractor shall assume all responsibility arising from preparing, placing, and the removal of forms, and shall assure himself that the concrete is properly cured to sustain loads before forms are removed.

(O) No frozen materials or materials containing ice shall be used. All concrete materials, forms, fillers and ground with which the concrete is to come in contact shall be free from frost. Whenever the temperature of the surrounding air is below 40 degrees Fahrenheit, all concrete, when placed in forms, shall have a minimum temperature of 55 degrees Fahrenheit, and shall be maintained at a temperature of not less than 40 degrees Fahrenheit for at least 72 hours. Concrete subject to freeze/thaw shall be air entrained to a content of six percent plus one and one-half percent.

(P) The City Inspector reserves the right to forbid the use of material from any plant, pit or source when the character of material, equipment in use or the method of operation is such in his opinion as to make it doubtful that a reasonable uniform class of material will be furnished.

(Q) Transporting, Placing, and Compacting. The transporting equipment shall be such as to deliver the concrete to the place of use without segregation and without undue loss of moisture. If the concrete is being placed in walls or structures more than five feet high, it shall be deposited into final position by means of tremies or similar equipment, and the maximum lateral movement of the concrete from any point of deposit shall not be more than five feet. It shall be deposited in even layers, not more than 24 inches in depth, and each layer shall be thoroughly vibrated preceding lift and next to the forms to ensure a smooth surface and the removal of air pockets. Particular attention shall also be given to working of the concrete around reinforcing steel and embedded fixtures in such manner as to produce a continuous homogeneous mass filling all corners and eliminating segregation of aggregate and air pockets. An internal vibrator shall be inserted vertically at intervals of 18 inches to 30 inches, depending on the thickness of the concrete. It shall be held in position and gradually withdrawn when air bubbles no longer come to the surface, which will usually require from five to fifteen seconds. All concrete shall be vibrated within 15 minutes after being placed in the forms. The vibrator shall not be permitted to come in contact with the forms, the reinforcing steel or embedded fixtures or to overvibrate the concrete at any point. Concrete shall not be transported laterally by means of vibrators.

(R) Joining New Concrete to Old. In joining new concrete to old, the old concrete shall be thoroughly treated with concrete epoxy preceding the placing of the new concrete. All surface film shall be removed from the old concrete, the surface roughened and thoroughly washed to remove loose particles. The methods employed to prepare the surface of the old concrete shall be approved by the Inspector in advance. A layer of mortar of the same proportions and consistency as the mortar used in the new concrete shall be thoroughly boomed into the surface of the old concrete, immediately before the new concrete is placed, but no pools of water shall be permitted on the surface of the old concrete when the mortar is placed.

(S) An original copy of the concrete batching ticket shall be given to the City Inspector at time of delivery. Ticket is to include the plant designation, ticket number, mix design number, slump, air entrainment, type of concrete, gallons of water added on site, time of leaving plant, time of arrival on site and bag mix. Concrete could be rejected if ticket is not available and does not meet City standards. [Code 1971 Appendix § 3.]

8.45.40 Steel reinforcement.

(A) General Description. (Specifications shall only apply where the International Building Code as adopted by the State of Utah does not.) All steel bars used for concrete reinforcement shall be grade

60 deformed bars conforming to ASTM A-615 and shall include the supplementary requirements.

(B) Cutting and Bending. All cutting and bending shall be done at the mill or shop unless provisions satisfactory to the Inspector are made for handling this work in the field. The radius of curvature of the bends shall not be less than four diameters. All bending shall be done cold. Heating preparatory to bending will not be permitted. All steel shall conform accurately to the dimensions shown on the plans.

(C) Surface Condition. All steel shall be clean and free from mill scale, flakes of loose rust, cement, concrete, paint, oil, grease or any other foreign material, except that a thin layer of tightly adhering rust may be permitted if approved by the Inspector.

(D) Placing. All reinforcement bars shall be placed accurately, as shown on the plans, wired at intersections and spaced and supported by means of metal chairs, spacers, hangers or other devices approved by the Inspector. The placing of bars on layers of fresh concrete as the work progresses will not be permitted. The reinforcement shall be securely bound together and rigidly held in the required position. Where splices are made, the base shall be tapped 40 diameters or a minimum of 20 inches and tightly wired together.

(E) Inspection. No concrete shall be placed in any reinforced concrete structure until the steel and its placement have been inspected and approved by the Inspector and he has given permission to proceed with the placing of concrete. Any concrete placed in violation hereof shall be rejected and shall be removed by the contractor at his own expense.

(F) Storage and Protection. All reinforcement steel shall be stored in such manner as to be protected from the elements. It shall be stored on skids or other supports approved by the Inspector, and shall be protected against physical damage. No bars that are bent, twisted, kinked or warped shall be used in the work. No bars that have been bent shall be straightened and used in the work.

(G) Welded steel wire fabric shall conform to ASTM Designation A-185. [Code 1971 Appendix § 4.]

8.45.50 Sidewalks.

(A) Excavation. All excavation required for concrete sidewalks and preparation of subgrade shall be made as provided in these specifications and shall include all applicable provisions therein contained. If the sidewalk under construction does not cover the entire area between the curb and the property line, then after the forms have been removed, the depressions along the edges of the sidewalk pavement shall be backfilled with approved material, properly moistened and hand tamped to the satisfaction of the Inspector, and the areas between the sidewalk and the curb and between the sidewalk and the property line shall be finished to a uniform slope, as shown on the plans, with fine material, free from stones and large lumps, and then neatly surfaced with hand rakes. Where the excavation extends into lawns, the sod shall be taken up, carefully preserved and relaid by the contractor.

(B) Subgrade. After having excavated the area as described in subsection (A) of this section, it shall be compacted immediately in advance of placing the base material and shall be maintained in a suitable condition until the base has been placed.

(C) Base Course. The base course shall be composed of natural gravel or crushed gravel placed on the prepared subgrade. The gradation of the aggregate shall be as follows:

Sieve Size	Percent Passing Gradation Band
1 inch	100
1/2 inch	70 100
No. 8	40 70
No. 16	20 40
No. 50	10 27
No. 200	4 13

The base course shall be placed to a depth of four inches and shall be compacted to 95 percent of maximum laboratory density as determined by AASHTO T-180 Method D. Compaction in conformance with SCC 8.45.010 shall be to the satisfaction of the City Inspector.

(D) Forms. The forms shall comply with all applicable requirements of these specifications. The width of the material shall be equal to the full

depth of the sidewalk pavement and the upper edge shall be set accurately to the required elevation of the finished surface.

(E) Resetting Frames and Covers, Etc. Where there are structures existing, within the area of the sidewalk being constructed, such as valve boxes, meter boxes, hydrant boxes, sewer manholes, etc., that require resetting of frames and covers, or the building up or cutting down of the structure to fit the grade of the sidewalk, this work shall be done by and at the expense of the contractor unless otherwise provided in these specifications. Work shall be done to the satisfaction of the Engineer.

(F) Class of Concrete to Be Used. In the construction of concrete sidewalks air entrained concrete and Type II cement shall be used.

The concrete materials and the proportioning, mixing, transporting, placing, protection and curing of the same shall conform to all the applicable requirements of SCC 8.45.030. Vibration will not be required.

(G) One Course Sidewalk. The concrete shall be placed on the subgrade, prepared as above described, to the full depth of the sidewalk, as shown on the plans, in one course. The full quantity of concrete required shall be deposited in as near its final position as practical in one operation, and the placing shall be completed with shovels. Spades shall be used along the edges to bring the concrete into uniform and complete contact with the forms. Hand tampers approved by the Engineer shall be used for compacting. A heavy iron shod straight edge shall be used for striking off the concrete at the proper elevation. Wood floats shall be used for bringing the material to a uniform surface, and after the surface has partially set, all edges shall be finished with an approved edging tool having a three-eighths inch radius, and the surface shall then be finished with a wood float or by floating with a steel trowel as directed by the Inspector. On steep grades the surface shall be roughened as directed by the Inspector.

(H) Sidewalk Pavement. All concrete sidewalk shall be constructed to the lines, grades and dimensions as shown on the prepared plans, or as directed otherwise by the Engineer. All concrete sidewalk shall be installed by the developer prior to the final warranty inspection. It shall be built four inches thick except at and through driveways. Concrete sidewalk built at and through resident driveways that are used generally for passenger car traffic shall be six inches in thickness through the entire width of driveway. At driveways, other than resident driveways, such as service stations and at all driveways used for commercial and industrial traffic, the thickness of the sidewalk through the entire driveway shall be as shown on the drawing, or as determined by the Engineer; but in no case shall the thickness of the concrete walk be less than seven inches.

(I) Joints. Transverse expansion joints shall be constructed in all concrete sidewalk at intervals of approximately 32 feet. These joints shall be one-half inch in thickness and shall run the full width and depth of the sidewalk pavement. Expansion joints shall also be constructed between the sidewalk and curb, between the sidewalk and buildings abutting said sidewalk, around all poles, hydrants, manhole frames and/or other structures coming within or immediately adjacent to the sidewalk area, and at such other points as shown on the plan or as directed by the Engineer. The width of expansion joint at the above-mentioned locations shall be as shown on the drawing, or as directed by the Engineer, except that the expansion joint abutting curb shall be a special joint one inch wide by eight inches deep. All expansion joints shall extend the full depth of the sidewalk pavement being constructed and shall be constructed at right angles to the centerline and surface of the sidewalk pavement. A metal holder shall be used to hold the expansion joint rigidly and securely in place during the sidewalk construction.

(1) The expansion joint filler to be used shall be prepared resilient, nonextruding joint filler conforming to the requirements of ASTM specifications, designation D-544-52T, or as last revised, and as approved by the Engineer, cut or molded to proper dimensions, and it shall be so placed in relation to surface of sidewalk pavement to allow for pouring of joint sealer compound.

(2) In addition to the expansion joint all concrete sidewalks shall be marked transversely with a marking tool, at intervals equal to the width of the sidewalk being built, and every third marking shall be a contraction joint. Each contraction joint shall be finished with an edging tool and shall be cut to a depth of one-quarter of the sidewalk slab thickness. Additional contraction joints shall be provided as and where shown on the drawing or as

directed by the Engineer, or as further described in the "Detail Specification." Ordinary markings shall not be more than one-quarter inch in depth.

(3) All expansion joints and contraction joints constructed in concrete sidewalks shall be sealed by a hot poured rubberized asphalt joint sealing compound that is resilient and adherent to the concrete to prevent infiltration of water and foreign substances into and through joints. The joint sealing compound used shall first be submitted to the Engineer and approved by him, and the compound shall be handled and placed as directed and to the satisfaction of the Inspector.

(4) All above joint filler and sealer shall be furnished and properly placed at the expense of the contractor, unless otherwise provided in these specifications.

(J) Wasted Concrete. Retempering concrete that has partly set will not be permitted. Concrete that for any reason has been mixed too wet shall be wasted. Concrete that is partly set shall not be used in the work. Waste concrete shall be disposed of by the contractor in a manner satisfactorily to the Inspector.

(1) All concrete surfaces not coming in direct contact with the forms shall be struck off with a straight edge to the exact form and elevation required. The surface shall then be finished with a wood float or steel trowel as shown on the plans or as ordered by the Inspector, and the edges shall be finished with an approved edging tool.

(2) If any special type of finish is required on any of the concrete included in this section, detailed requirements will be found in the "Detail Specifications" attached hereto.

(K) Curing. All portland cement concrete shall be cured by acceptable means and approved by the Engineer. The work shall be done in an efficient and systematic manner. The curing period shall not be less than seven days.

(L) Concreting in Cold Weather. If the contractor desires to place concrete in cold weather he shall assume all responsibility for damage that may be caused by freezing or by any other cause, even though permission to proceed may have been given by the Engineer. In no case, however, shall concrete be placed when the temperature is 45 degrees Fahrenheit and falling, unless the contractor has complied with the following requirements and such additional precautions as he may consider to be necessary or advisable:

(1) Provision shall be made for heating the water and, if necessary, the aggregates also. If the aggregates are heated, it shall preferably be done with steam by means of closed steam coils.

(2) The temperature of the mixed concrete when placed in the forms shall be between 50 degrees Fahrenheit and 70 degrees Fahrenheit, depending on the temperature of the air.

(3) When the concrete has been placed, the forms and concrete shall be covered with tarpaulins or other approved covering and a sufficient number of perforated steam pipes provided under the covering to maintain the temperature needed to ensure proper curing.

(4) The use of any admixture to lower the freezing point of the concrete is forbidden.

(5) No concrete shall be placed upon a frozen subgrade and no frozen materials shall be used in the concrete.

(6) Salamanders shall not be used without special permission from the City Engineer, and if the use of salamanders is permitted, then each salamander shall have a vessel containing water placed on it in order to maintain the necessary humidity to prevent drying of the concrete. Water shall be maintained continuously in the vessel.

(7) The material shall be free from ice, snow and frozen lumps when introduced into mixer.

(M) Concreting in Hot and/or Dry Weather. Whenever the ambient temperature is above 80 degrees Fahrenheit or the humidity is below 10 percent, the City Engineer may, at his discretion, require trial batches to determine the period of initial set. If, in the opinion of the City Engineer, weather conditions are such that the initial set is accelerated, the maximum period specified for mixing, placement and compaction shall be reduced to allow at least 10 minutes time before initial set. The term "initial set" shall be construed as the time in which, in the opinion of the Engineer, the concrete is no longer workable. Necessary steps will be taken at the direction of the Engineer to protect the concrete from undesirable effects of heat. These steps may include:

(1) Spraying forms, reinforcing steel and subgrade to prevent absorption of water from mix.

(2) Erecting sun shades and wind breaks.

(3) Protecting slabs before final finishing by covering with waterproof or Visqueen.

(4) Spraying outside of forms to cool concrete.

(5) Cooling mixing water.

(6) Spraying coarse aggregate to reduce temperature.

(N) Temporary Stoppage of Work. If, for any reason, work is discontinued for a period long enough for the concrete to become set or partially set, then a construction joint shall be provided, preferably at a transverse expansion joint, or if that is impracticable, then at a transverse contraction joint. A bulkhead shall be placed between and at right angles to the side forms and at right angles to the surface of the pavement. It shall extend through the full depth of the pavement and the upper edge shall be set flush with the upper edge of the forms. The concrete shall be finished against this bulkhead to the full depth of the pavement and any excess concrete shall be wasted, and all work shall be done to the satisfaction of the Inspector before work is stopped. [Ord. 04-11; Code 1971 Appendix § 5.]

8.45.60 Curb and gutter.

(A) Excavation for Curb and Gutter—Preparation of Subgrade, Base and Backfilling. All excavation and preparation of subgrade and base required for construction of concrete curb and gutter and reinforced concrete shall be as outlined in SCC 8.45.070, as determined by the Engineer. Embankment required under the concrete shall be with approved material compacted to 95 percent of maximum density. Base material will be required as outlined in SCC 8.45.050.

(B) Construction. Concrete curb and gutter and reinforced concrete drain gutter shall be constructed in conformity with the lines, grades, slopes, form and dimensions shown on the plans or as designated by the Engineer. In the construction of combined curb and gutter, the entire structure will be built simultaneously and no joint or line of cleavage shall be made between the curb and the gutter.

(C) Class of Concrete. The concrete used for the construction of reinforced concrete drain gutter and concrete curb and gutter shall be air entrained using Type II cement and shall be as outlined in SCC 8.45.030. The curb and gutter shall be constructed monolithically.

(D) Joints. At intervals of 10 feet, joints shall be made by inserting from plates one-eighth inch in thickness and shaped to the exact form and dimensions of the curb and gutter. Plates must be smooth and clean. They shall be oiled with mineral oil immediately before using. Any plate that has become warped or damaged shall not be used. They shall be carefully removed after the concrete has set, and any concrete broken out shall be repaired to the satisfaction of the Inspector.

(1) Expansion joints one-half inch thick shall be provided at approximately 50-foot intervals. The expansion joint filler shall be shaped to the exact form and dimensions of the curb and gutter, shall be one-half inch in thickness, and shall conform to ASTM Designation D-544-52T, or as last revised, and as approved by the Engineer.

(2) At the contractor's option, plates a minimum of two inches deep may be substituted for the full-depth plates at contraction joints only. A full plate must be used at expansion joints and ends of the constructed section, such as at driveways, curved sections and/or where determined by the Engineer.

(3) After division plates have been removed and expansion joints have been properly set, then all joints shall be sealed in a manner and with material approved by the Engineer.

(E) Placing, Compacting and Curing. The method of mixing, placing, compacting, finishing and curing, etc., of the concrete shall conform to all applicable requirements of SCC 8.45.050, as determined by the Inspector.

(1) Curb and gutter may be placed by an approved slip form method. The slip form machine equipment shall spread, consolidate, screen and float finish the freshly placed concrete in such a manner that a minimum of hand float finishing will be required to provide a dense and homogeneous concrete section.

The concrete shall be distributed uniformly into final position by the machine without delay and competently placed true to line and grade.

The contraction joints every 10 feet may be provided by cutting into the fresh concrete to a minimum depth of one and one-half inches to create a weakened vertical plane. The edges of such joints shall be tooled with an edger so as to provide

a neat, workmanlike appearance. Expansion joints will not be required except at adjacent pavement, walk or structure.

This option shall be so noted in the bid schedule by the contractor when this alternate is used in bidding this item.

(F) Reinforced Concrete Drain Gutter. The reinforced concrete drain gutter shall be constructed simultaneously with the adjoining gutters and shall consist of concrete a minimum of eight inches in thickness, unless otherwise shown, and reinforced longitudinally, and shall be built to conform to dimensions, form and to elevations as shown on the plans or as directed by the Engineer.

The concrete used shall be the same as provided in subsection (C) of this section.

The methods of placing, spading, compacting, finishing and curing, as provided in subsection (E) of this section shall apply to the construction of the drain gutter.

Where necessary, in the opinion of the Engineer, gravel shall be placed and thoroughly compacted to form a base for the drain gutter, as directed by the Inspector.

(G) Protection. The contractor shall protect all curb and gutter and drain gutter from damage from traffic and all other causes until accepted by the City. Should the curb and gutter or drain gutter become damaged by weather, traffic, or during the rolling of the street, or from any other cause, it shall be repaired by reconstructing an entire section, by and at the expense of the contractor and to the satisfaction of the Inspector. [Code 1971 Appendix § 6.]

8.45.70 Excavation and backfill for pipelines.

(A) Description. Excavation of trenches for pipelines shall include the excavation of all materials, of whatever nature, except pavement, coming within the designated lines of the trenches, as hereinafter described. It shall include the excavation of all materials required for the construction of manholes, flush tanks, cleanout boxes, meters, pressure regulators and other appurtenances as shown on the drawings or directed by the Engineer. It shall include all excavation required for the removal or lowering of existing pipelines or appurtenances and shall include all necessary clearing and grubbing, all necessary draining, pumping, timbering, sheeting and subsequent removal of these materials as directed by the Inspector. It shall include the disposal of all material excavated and the backfilling of the trenches and appurtenant structures as hereinafter provided.

(B) Subgrade. The subgrade for all pipeline trenches is hereby defined to be the bottom of the trench at the elevation of the outside bottom of the pipe.

(C) Limits of Excavation. The trench shall be excavated 10 inches wider than the inside diameter of the pipe, except for concrete pipe, for which it shall be excavated 12 inches wider. The sides of the trench shall be vertical and the depth of the trench shall be measured from the existing ground surface to the subgrade of the trench; provided, that on paved streets the depth shall be measured from the bottom of the pavement to the subgrade of the trench. All excavation required for manholes, flush tanks, cleanout boxes, meter boxes, valve boxes, pressure regulators and other appurtenances shall be made and measured as described under "Excavation for Structures"; provided, however, that such measurements shall include only such additional material as is excavated outside the designated lines of the trench.

(D) Excavation in Rock. If the bottom of the trench for any pipeline is in rock or in material too hard to permit the bed to be properly formed for the pipes, the excavation shall be made not less than four inches below the established subgrade, and the bottom of the trench shall be brought to subgrade with approved material compacted into place as ordered by the Inspector.

(E) Excavation Other Than Rock. Where the bottom of the trench is composed of material other than rock, care shall be exercised to prevent any disturbance of the material beyond the prescribed lines, and if any material is so disturbed, it shall be tamped back into place in a manner satisfactory to the Inspector.

(F) Undesirable Material. If any undesirable material is encountered in the bottom of the trench, the contractor shall make such additional excavation as the Inspector may direct, and shall replace it with gravel of a quality that will pack, and said gravel shall be tamped into place in four inch layers to the satisfaction of the Inspector.

(G) Bridging. The contractor shall construct suitable bridging over the trench at all street inter-

sections and at driveways to property abutting the line of the work, and at such other points as may be required. The bridging shall be of sufficient strength to carry the loads required. For public vehicle crossings it shall be capable of supporting a 15-ton truck.

(H) Disposal of Seepage, Storm Water or Sewage. The contractor shall remove all seepage, storm water or sewage that may be found or may accumulate in the excavation during the progress of the work. He shall furnish all labor, pumps and other equipment and appliances necessary therefor, and shall keep all excavations entirely free from water at all times during the construction of the work and until the Inspector shall give instructions to cease pumping.

(I) Tunneling. No tunneling will be permitted unless permission is given in writing by the Inspector.

(J) Protection of Pipes. All water, gas, sewer or other pipes encountered in excavating for the trench or appurtenances shall be supported and protected from injury in a manner satisfactory to the Inspector.

(K) Parking, Lawns, Etc. Where the pipeline or structure is located on, along or across sodded parking, lawns or grass plots, the contractor shall in advance of making the excavation, remove the lawn or sod and give it proper care and attention, and shall replace the same in as nearly the original location and condition as is reasonably possible after the excavation has been backfilled and settled. Where it is necessary to deposit the excavated material on lawns or parking during the process of construction, the contractor shall first spread canvas or similar material of suitable size upon the grass to prevent any of the excavated material from coming in contact with the sod. The excavated material shall be removed as soon as possible in order to avoid injury to the grass and the contractor shall replace, at his own expense, any sod that is damaged.

(L) Trench in Unpaved Street. Where the trench is in an unpaved street, the backfilling shall be slightly rounded over the trench and left to settle for such time as the Inspector may direct, at which time it shall be thoroughly rolled with a five-ton truck loaded to capacity. The entire area of the trench shall be covered at least three times by the tread of the tires, after which any depression or irregularities shall be smoothed up to the proper elevation and rerolled. The surface over the trench shall be left in a uniformly smooth condition, conforming to the street surface and all excess material shall be removed. During the interval of waiting for settlement of the material in the trench, the contractor shall keep the surface over the trench oiled and shall maintain said surface in good condition until finally completed and accepted.

(M) All backfill operations shall be completed within 10 calendar days from the start of excavation.

(N) All backfill material shall be free from cinders, ashes, refuse, organic and frozen material, boulders, stones, or other material that, in the opinion of the City Engineer, is unsuitable.

(O) Backfill material under, around, and to one foot over the pipe shall consist of select earth, sand or fine gravel, free from clods, lumps or stones larger than one and one-half inches to their maximum dimensions. This shall be limited to three-fourths inch maximum around PVC, ABS or polyethylene lines. In wet or unstable conditions, material in this zone shall be free-draining, nonplastic material.

(P) Backfill under and around the pipe to the centerline shall be placed in maximum layers of six inches. Bell holes of ample dimensions shall be dug in the bottom of the trench for each pipe. Uniform bearing for each pipe barrel shall be provided for the full length of each pipe. Backfill from the centerline to one foot above the pipe shall be placed and compacted in maximum layers of six inches. Backfilling under improved areas (such as paved streets) shall be placed and compacted in six-inch layers. All layers through improved areas will be compacted to not less than 95 percent of the maximum standard proctor density (T-99). Only in the zone from one foot above the pipe to finished subgrade under unimproved areas will the use of wheel compaction be allowed. Adequate testing by the contractor shall be required to satisfy compaction requirements.

(Q) All subsequent settling of backfill areas will become the sole responsibility of the contractor for a period of not less than two years following the final approval of the entire project.

(R) Impervious backfill shall be required at irrigation canal crossings or other waterway interferences.

(S) All areas disturbed by excavation and backfilling construction shall be restored to original condition, or better, at the contractor's expense. [Code 1971 Appendix § 7.]

8.45.80 Culinary water.

(A) Materials.

(1) Fire Hydrants. Fire hydrants shall meet the requirements of the current AWWA Standard Specification C-502 for fire hydrants for ordinary water works service with the following supplementary qualifications:

(a) Length for depth of trench to be as specified.

(b) Two hose nozzles two and one half inches in diameter with national standard fire hose thread.

(c) One steamer nozzle four and one half inches in diameter when ordered with national standard fire hose thread.

(d) Counter clockwise to open.

(e) Operating nut pentagon, one and one-half inch point to flat.

(f) All internal parts to be removable from top of hydrant without the use of special tools.

(g) Operating valve nut shall be within six inches of finished surface grade.

(2) Flanged Fittings. All flanged fittings shall be in accordance with the current AWWA Specification C-110 for cast iron fittings.

(3) Check Valves. Standard iron body swing check valves for 150 pound working pressure Crane, Ludlow or equal.

(4) Dresser Couplings. Latest standard style with rubber gasket for water. For diameters four inches to 14 inches middle ring to be a minimum of one-fourth inch thick and five inches long with four-and-five-eighths-inch bolts for four-inch diameters; six-and-five-eighths-inch bolts for six- and eight-inch diameters and eight-and-five-eighths-inch bolts for 10-, 12-, and 14-inch diameters.

(5) Steel Pipe. Steel pipe shall conform to the current AWWA Specification C-201.

(6) Certification of all tests required by the American Water Works Association shall be provided by the manufacturer. The three-edge bearing test will be required, upon request of the Engineer.

(7) All pipe shall be standard lengths except for making connections to valves, fittings, and other such closures.

(8) Concrete Pipe. Concrete pipe shall conform in quality to the A.C.I. concrete standards. Sufficient proof of loading, bearing and sizing capacity for its intended use shall be required by the City Engineer.

(9) Cast iron pipe shall conform to the provisions of American Standard Specifications ASA-A2.6 or A21.8 for Class 250 bell and spigot pipe with push on joint. Fittings shall be mechanical or push on joints, Class 250 conforming to ASA-A21.10 and A21.11. The interior of the pipe and fitting shall have a cement mortar lining conforming to the requirements of ASA-A21.4. The outside coating shall be a bituminous coal tar base coating approximately one mil thick.

(10) Ductile Iron Pressure Pipe. Ductile iron pipe where designated shall be centrifugal spun ductile iron, Class 50 or better. Ductile iron pipe shall have a standard thickness cement liner and shall conform to all requirements for AWWA Standard C-151 for centrifugal spun ductile iron pipe with "push on" or bell and spigot type joints. Required glands, gaskets, bolts and nuts shall be furnished. Pipe shall be coated with bituminous coal tar base, approximately one mil thick. The nominal laying length of the pipe shall be 18 feet. The maximum allowable pipe deflection shall be three degrees per joint with a recommended deflection of two degrees or less per joint. Pipe deflection shall be limited to two degrees at crosses, valves, couplings, and fire hydrants. Except where specifically noted on the plans, ductile iron pipe shall have bell and spigot ends. Ductile iron pipe underground shall be protected against external corrosion by loose polyethylene sleeves in accordance with AWWA C-105.

(11) PVC Pressure Pipe. PVC Class 900 pipe shall meet the requirements of ASTM D-2241 except that the pipe shall have an outside diameter of ductile iron pipe sizes instead of iron pipe sizes. The PVC pipe shall meet the requirements of the AWWA C-900 with pressure clasp of 150 and the D.R. of not less than 18. At least 85 percent of the total footage shall be furnished in standard 20-foot lengths.

(12) Fittings. Fittings for PVC pipe shall be cast iron fittings as specified under cast iron and

ductile iron pipe, and be properly sized for the dimensions of the pipe being used. All fittings for joining pipe four inches in diameter and larger shall be of the push-on rubber gasket or mechanical joint type of fitting.

(13) Replacement of Damaged Material. Any material that becomes damaged shall be replaced by the subdivider at his own expense.

(14) Responsibility for Safe Storage. The subdivider shall be responsible for the safe storage of material furnished by or to him, and accepted by him, and intended for the work, until it has been incorporated in the completed project.

(15) Handling Pipe and Accessories. Pipe, fittings, valves, hydrants, and other accessories shall, at all times, be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists or slid, or rolled on skidways in such manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground. All pipe, fittings, valves and hydrants shall be carefully lowered into the trench piece by piece by means of derrick, ropes or other suitable tools or equipment, in such manner as to prevent damage to pipe or pipe coating. Under no circumstances shall pipe or accessories be dropped or dumped into the trench. Pipe shall be handled in such manner that a minimum amount of damage to the coating will result. Damaged coating shall be repaired in a manner satisfactory to the Engineer.

(16) Gate valves shall be iron body, bronze mounted, double disc with nonrising stems with design construction to AWWA C-500, and modifications herein. Stem seals shall be double O-ring seals; valves shall open counterclockwise. Provide two-inch square wrench nut for key operation. Operating valve nut shall be within six inches of finished surface grade. Install 24 inches of crushed rock from the bell top of the valve to the trench grade below the valve to provide proper drainage. Provide mechanical joint ends, except gate valves for use with fire hydrants.

(17) Valve boxes shall be buffalo type, sliding type with base as required for the valve size used and of sufficient length for the specified pipe bury. It shall have the word "water" stamped thereon.

(18) Locating wire and tape shall be provided and installed along PVC pipelines one foot directly above the pipe. The wire shall be 14 gauge 600 volt PVC jacketed wire manufactured for underground services. Wire shall terminate and be exposed in valve boxes as directed by the Public Works Department for easy access. Installation contractor shall install "culinary waterline buried below" tape if pipe color does not meet City requirements.

(B) Laying Pipe.

(1) General. All pipe shall be laid and maintained to the required lines and grades, with fittings, valves and hydrants at the required locations, and with joints centered and spigots home, and with all valve and hydrant stems plumb. No deviation shall be made from the required line or grade except with the written consent of the Engineer.

(2) Permissible Deflections at Joints. Wherever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane to avoid obstructions, to plumb stems, or where long radius curves are permitted, the degree of deflection shall be approved by the Engineer.

(3) Protecting Underground and Surface Structures. Temporary support, adequate protection and maintenance of all underground and surface utility structures, drains, sewers and other obstructions encountered in the progress of the work shall be furnished by the contractor at his own expense under the direction of the Engineer.

(4) Deviations Occasioned by Other Utility Structures. Wherever existing utility structures or branch connections leading to main sewers or to main drains, or other conduits, ducts, pipes, or structures present obstruction to the grade and alignment of the pipe, they shall be permanently supported, removed, relocated or reconstructed by the contractor through cooperation with the owner of the utility, structure or obstructure involved. In those instances where their relocation or reconstruction is impracticable, a deviation from line and grade will be ordered, and the change shall be made in the manner directed by the Engineer. Connections to private residences shall be cut and looped around the pipeline.

(5) Pipe Kept Clean. All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench,

and it shall be kept clean by approved means during and after laying.

(6) Bell Ends to Face Direction of Laying. Unless otherwise directed, pipe shall be laid with bell ends facing the direction of laying, and for lines on an appreciable slope, bells shall, at the discretion of the Engineer, face upgrade.

(7) Preventing Trench Water from Entering Pipe. At times when pipe laying is not in progress, the open ends of pipe shall be closed by approved means, and no trench water shall be permitted to enter the pipe.

(8) Cutting Pipe. Cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe.

(9) Pipe Jointing. Jointing of all pipe shall be as recommended by the manufacturer. All pipes shall be handled in such a way so as to prevent damage to the coating and lining. Refer to backfilling specifications for proper bedding and compaction. Thrust blocking shall be applied at all tees, plugs, caps and at bends deflecting 22.5 degrees or more. Prevention of concrete adhesion by means of 10 mil plastic sheeting to protect valves or pipe material shall be directed by the City Inspector.

(C) Setting Valve, Hydrant and Fitting.

(1) Valves. The contractor shall furnish all valves indicated on the plans as called for in these specifications or as called for proper operation of the water system. Valve manufacturer shall provide detailed information as required by the Engineer for evaluating the quality of the valve. The technical information shall include complete dimensions, weights and material lists. No valve will be approved for installation until the required information has been received and approved. Except as otherwise specified, all buried valves shall be painted with two coats of asphalt varnish in accordance with the requirements of AWWA C 500. Gate valves shall be iron body, resilient seat, nonrising stem conforming to AWWA C 509 with double O-ring. Valves shall open counter clockwise. Valve ends shall be flanged or mechanical joint as required for the type of pipe used. Maximum shutoff pressure shall be 200 psi.

(2) Location. Gate valves, hydrants and fittings shall be located as shown on the plans or as directed by the Engineer or Public Works Department Director.

(3) Valve Boxes and Valve Pits. Cast iron valve boxes shall be firmly supported, and maintained centered and plumb over the wrench nut of the gate valve, with box cover flush with the surface of the finished pavement or at such other levels as may be directed. The valve shall be supported by a concrete pressure block and surrounded with two feet in depth of coarse gravel around the base of the valve.

(4) Hydrants. Hydrants shall be located in a manner to provide complete accessibility, and in such a manner that the possibility of damage from vehicles or injury to pedestrians will be minimized. Maximum separation distance between fire hydrants shall not be greater than 500 feet. Unless otherwise directed, the setting of any hydrant shall conform to Items 4, 5, 6, and 7.

(5) Position of Nozzles. All hydrants shall stand plumb, and shall have their nozzles parallel with or at right angles to the curb, with the pumper nozzle pointing normal to the curb, except that hydrants having hose nozzles at an angle of 45 degrees shall be set normal to the curb. They shall conform to the established grade, with nozzles at least 12 inches above the ground.

(6) Drainage at Hydrant. A drainage pit two feet in diameter and two feet deep shall be excavated below each hydrant and filled compactly with coarse gravel or broken stone, mixed with coarse sand, under and around the bowl of the hydrant and to a level of six inches above the waste opening. No hydrant drainage pit shall be connected to a sewer.

(7) Anchorage for Hydrant. The bowl of each hydrant shall be well braced against unexcavated earth at the end of the trench with concrete backing, or it shall be tied to the pipe with suitable rods or clamps.

(8) Cleaning. Hydrants shall be thoroughly cleaned of dirt or foreign matter before setting.

(9) Plugging Dead Ends. Standard plugs shall be inserted into the bells of all dead ends of pipe, toes or crosses and spigot ends shall be capped.

(10) Anchorage of Toes, Tees, and Plugs. Reaction or thrust blocking shall be applied on all pipelines four inches in diameter or larger at all tees, plugs, caps and at bends deflecting 22.5 degrees or more, or movement shall be prevented by attaching suitable metal rods or straps as

directed by the Engineer. Thrust block size shall be determined by the subdivider's engineer and shall be shown on the plans.

(11) Material for Reaction Blocking. Reaction or thrust blocking shall be of concrete having compressive strength of not less than 2,000 psi. Blocking shall be placed between solid ground and the fitting to be anchored, the area of bearing on pipe and on ground in each instance shall be that required by the Engineer. The blocking shall be so placed that the pipe and fitting joints will be accessible for repair. The pipe shall be protected from the thrust block by a layer of 10 mil plastic.

(D) Hydrostatic Tests.

(1) Pressure During Test. After the pipe has been laid and partially backfilled, all newly laid pipe, or any valved section of it shall, unless otherwise specified, be subjected to maximum operating pressure.

(2) Duration of Pressure Test. The duration of each pressure test shall be at least 30 minutes at 220 psi.

(3) Procedure. Each valved section of pipe shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connections and all necessary apparatus shall be furnished by the contractor.

(4) Expelling Air Before Test. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, it necessary, at points of highest elevation, and afterward tightly plugged.

(E) Cleaning Water Mains. After chlorination, the mains shall be flushed thoroughly. Flushing shall be done after the pressure test is made. It must be understood that such flushing removes only the lighter solids and cannot be relied upon to remove heavy material allowed to get into the main during laying.

Unless extreme care and thorough inspection is practiced during the laying of water mains, small stones, pieces of concrete, particles of metal, or other foreign material may gain access to mains newly laid or repaired.

(F) Sterilizing Water Mains.

(1) General. Disinfection of water mains shall be done in accordance with "Procedure for Disinfecting Water Mains," AWWA C 601 68. The interior of all pipe, fittings and other accessories shall be kept as free as possible from dirt and foreign matter at all times.

(2) Chlorination.

(a) Form of Chlorine and Means of Application. Before being placed in service, all new water mains shall be chlorinated. If the available water is more alkaline than pH 8, the holding time in the main shall be increased at the discretion of the Engineer.

(b) Form of Applied Chlorine. Either of the following forms of chlorine may be used, subject to the approval of the Engineer:

(i) Liquid chlorine;

(ii) Calcium hypochlorite tablets.

(c) Methods of Chlorine Application.

(i) Continuous Feed Method. This method is suitable for general application.

Table 1

Chlorine Required to Produce 50 mg/l Concentration in 100 Feet of Pipe by Diameter

Pipe Size inches	100 Percent Chlorine pounds	1 Percent Chlorine Solutions gallons
4	0.027	0.33
6	0.061	0.73
8	0.108	1.30
10	0.170	2.04
12	0.240	2.88

Water from the existing distribution system or other approved sources of supply shall be made to flow at a constant, measured rate into the newly laid pipeline. The water shall receive a dose of chlorine, also fed at a constant, measured rate. The two rates shall be proportioned so that the concentration in the water in the pipe is maintained at a minimum of 50 mg/l available chlorine. To assure that this concentration is maintained, the chlorine residual should be measured at regular intervals in accordance with the procedures described in the current edition of Standard Methods and AWWA M 12 Simplified Procedures for Water Examination.

Table 1 gives the amount of chlorine residual required for each 100 feet of pipe of vari-

ous diameters. Solutions of one percent chlorine may be prepared with sodium hypochlorite or calcium hypochlorite. The latter solution requires approximately one pound of calcium hypochlorite in eight and one-half gallons of water.

During the application of the chlorine, valves shall be manipulated to prevent the treatment dosage from flowing back into the line supplying the water. Chlorine application shall not cease until the entire main is filled with the chlorine solution. The chlorinated water shall be retained in the main for at least 24 hours, during which time all valves and hydrants in the section treated shall be operated in order to disinfect the appurtenances. At the end of this 24 hour period, the treated water shall contain no less than 25 mg/l chlorine throughout the length of the main.

(ii) Tablet Method. Tablets are placed in each section of pipe and also in hydrants, hydrant branches, and other appurtenances. They shall be attached by an adhesive, except for the tablets placed in hydrants and in the joints between the pipe sections. All the tablets within the main must be at the top of the main. If the tablets are fastened before the pipe section is placed in the trench, their position should be marked on the section to assure that there will be no rotation. In placing tablets in joints, they are either crushed and placed on the inside annular space, or, if the type of assembly does not permit, they are rubbed like chalk on the butt ends of the sections to coat them with calcium hypochlorite.

The adhesive may be Permatex No. 1 or any alternative approved by the Engineer. There shall be no adhesive on the tablet except on the broad side next to the surface to which the tablet is attached.

(iii) Filling and Contact. When installation has been completed, the main shall be filled with water at a velocity of less than one foot/second. This water shall remain in the pipe for at least 24 hours.

Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water.

Table 2

Number of Hypochlorite Tablets Required for Dose of 50 mg/l*

Length of Section Feet	Diameter of Pipe Inches					
	2	4	6	8	10	12
13 or less	1	1	2	2	3	5
18	1	1	2	3	5	6
20	1	1	2	3	5	7
30	1	2	3	5	7	10
40	1	2	4	6	9	14

*Based on 3.75 grams available chlorine per tablet.

(iv) Preventive Measures During Construction. Precautions must be taken to protect pipe interiors, fittings, and valves against contamination. Pipe delivered for construction shall be strung so as to minimize entrance of foreign material. When pipe laying is not in progress, as for example at the close of the day's work, all openings in the pipeline shall be closed by watertight plugs. Joints of all pipe in the trench shall be completed before work is stopped. If water accumulates in the trench, the plugs shall remain in place until the trench is dry.

Note: Delay in placement of delivered pipe invites contamination. The more closely the rate of delivery is correlated to the rate of pipelaying, the less this delay.

If dirt that, in the opinion of the City Engineer or Inspector, will not be removed by the flushing operation enters the pipe, the interior of the pipe shall be cleaned and swabbed as necessary, with a five percent hypochlorite disinfecting solution.

(v) Preventing Reverse Flow. Valves shall be manipulated so that the strong chlorine solution in the line being treated will not flow back into the line supplying the water.

(vi) Retention Period. Treated water shall be retained in the pipe long enough to destroy all non-spore forming bacteria. This period should be at least 24 hours and preferably longer, as may be directed. After the chlorine-treated water has been retained for the required time, the chlorine residual

at the pipe extremities and at other representative points should be at least 25 ppm.

(vii) Chlorinating Valves and Hydrants. In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be operated while the pipeline is filled with the chlorinating agent.

(viii) Final Flushing and Test. Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipeline at its extremities until the replacement water throughout its length shall, upon test, be proved comparable to the quality of water served the public from the existing water supply system and approved by the public health authority having jurisdiction. This quality of water delivered by the new main should continue for a period of at least two full days as demonstrated by laboratory examination of samples taken from a tap located and installed in such a way as to prevent outside contamination. Samples should never be taken from an unsterilized hose or from a fire hydrant because such samples seldom meet current bacteriological standards.

(ix) Repetition of Procedure. Should the initial treatment fail to result in the conditions specified above, the chlorination process shall be repeated until such results are obtained. [Ord. 04-11; Code 1971 Appendix § 8.]

8.45.90 Sanitary sewers.

(A) Concrete Sewer Pipe.

(1) Description. Sanitary sewers shall include the performance of all operations necessary to lay sewer pipe mains, wye branches, individual sewer mains to manholes, test mains for leaks and all incidental work necessary to complete the work in a satisfactory manner.

(2) Sewer Pipe. All pipe for the sanitary sewer mains shall be bell and spigot. The type of pipe the contractor proposes to install shall have the approval of the City Engineer before work is commenced. No interchanging of type of pipe will be allowed.

(3) Nonreinforced Concrete Sewer Pipe. Nonreinforced concrete sewer pipe shall conform to Concrete Sewer Pipe ASTM Designation C-14-56.

(4) Reinforced Concrete Sewer Pipe. Reinforced concrete sewer pipe shall conform to the requirements for "Reinforced Concrete Sewer Pipe: ASTM Designation C-75556." Cement used in the pipe shall conform to Type 11A (the air entraining agent shall be interground at the mill), low alkali cement, conforming to Federal Specifications, 192a, of ASTM Designation C-15C-53.

(5) Length of Pipe. Pipe 36 inches in diameter and under shall be at least 36 inches long except specials. Pipe over 36 inches in diameter shall be at least as long as the inside diameter. The maximum length of pipe shall be 24 feet.

(6) Testing. Random samples of pipe and all fittings and specials such as short radius bands, wyes and toes shall be tested as specified for the type of pipe being used.

(7) Laying. No pipe shall be laid under any circumstances until the pipe has been tested, and the samples selected have satisfactorily passed the requirements. All pipe shall be laid upgrade from structure, unless otherwise expressly permitted by the Engineer, with the bell end of the pipe upgrade. All pipe shall be laid true to line and grade, with a uniform bearing under the full length of the barrel of the pipe, and suitable excavation shall be made to receive the bell of the pipe. All adjustments to grade shall be made by scraping away or tamping earth under the pipe. Wedging or blocking under the hub will not be permitted. As each unit of pipe is laid a sufficient amount of selected backfill materials shall be carefully placed and thoroughly tamped about the lower portion of the pipe to hold it firmly in position. If adjustment of the position of a length of pipe is required after it has been laid, it shall be removed and rejoined as for a new pipe. When laying is not in progress the ends of the pipelines shall be kept closed to prevent the entrance of foreign material.

(8) Rubber Gasket Joints. Pipe for rubber gasket joints shall be of the bell and spigot type, detail of the type the contractor proposes to use shall be furnished and must have the approval of the City Engineer before the work is to be commenced. The joint shall be so designed as to provide for self-centering and when assembled, to compress the gasket to form a watertight seal. The pipe design and gasket shall be such that movement of the pipe or hydrostatic pressure cannot displace the gasket. In order to assure watertightness the clearance between the inner surface of the bell and the outer surface of the spigot, as well as the dimensional tolerances of this annular space, shall

be such that the gasket residual deformation is neither less than 20 percent nor more than 45 percent when the spigot is seated to the full depth of the bell socket.

(9) Rubber Gaskets. The rubber gasket for use on pipe shall be cured in such a manner that any cross-section will be dense, homogeneous, and free from porosity and other imperfections. The gasket shall be extruded or molded to the specific size within a tolerance of plus or minus one-thirty-second of an inch at any cross-section of the gasket. The gasket shall be fabricated from a high-grade tread-type compound. The basic polymer shall be natural rubber, or a copolymer of butadiene-styrene synthetic. The compound shall contain no factice and shall have the following characteristics:

Tensile strength, pounds per square inch, minimum	2,300
Elongation at break, percent, minimum	425
Shore durometer (Type A)	40 to 60
Absorption of water, by weight, two days at 70 degrees Celsius, percent maximum	5
Compression set (constant deflection), percent of original deflection, maximum	20
Tensile strength after oxygen bomb aging (48 hours, 158 degrees Fahrenheit, 300 per square inch), percent of tensile strength before aging, minimum	80
Increase in shore durometer hardness after oxygen bomb aging, maximum increase over original shore durometer	8
Acetone, extract, percent, maximum	15

The physical properties of the rubber compound shall be determined by tests performed in accordance with the appropriate section of Federal Specifications ZZ-R-601a, except for shore durometer and compression set. All tests for compression set shall be made in accordance with Method B, ASTM Designation D-395 for compression set of vulcanized rubber under constant deflection. Tests for shore durometer shall be made in accordance with ASTM Designation D-676. The contractor shall furnish certified copies of test reports as evidence of the rubber compound used in all rubber gaskets before any gaskets are used to join pipes. All rubber shall be stored in as cool a place as practicable, preferably at 70 degrees or less, and in no case shall the rubber for joints be stored exposed to the direct rays of the sun. All rubber gaskets shall be stored so as to permit free circulation of air about the rubber.

In all cases during the laying of the pipe extreme care must be taken to see that the rubber gaskets are properly fitted in place and at all times are free from twisting and unusual displacement.

(B) Poly (VinylChloride) Sewer Pipe (PVC).

(1) General. This specification covers requirements for PVC pipe and fittings to be furnished for sanitary sewer.

Pipe and fittings produced to the standards below should be installed in accordance with ASTM recommended practice D-2321, underground installation of flexible thermoplastic sewer pipe. The plastics nomenclature used in the specifications is in accordance with the definitions given in nomenclature D-883, unless otherwise indicated.

(2) Applicable Documents. PVC sewer pipe furnished under this specification shall meet the following ASTM standards: D-256, Impact Strength; D-638, Tensile Strength and Modulus of Elasticity; D-648, Deflection Temperature under Load of 264 psi; D-1784, Specifications for Rigid Poly (VinylChloride) Compounds and Chlorinated Poly (VinylChloride) Compounds; D-3034 (SDR 35) Type PSP Poly (VinylChloride) (PVC) Sewer Pipe and Fittings. The requirements of this specification are intended to provide pipe fittings suitable for nonpressure drainage of sewage.

(3) Materials. Basic materials of the pipe and fittings shall be PVC plastic having a self-classification of 12454-B and shall meet the minimum physical properties and chemical resistance of the PVC compound as defined in ASTM D-1784.

(4) Connection Joints. All sizes and classifications of PVC gravity sewer pipe shall have joints utilizing rubber gaskets for sealing. Gaskets shall meet specifications defined in ASTM D-2000-AA820, ASTM 2000-AA625 and ASTM D-1869.

(5) Workmanship. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects. The pipe shall be as uniform as commer-

cially practical in color, density, and other physical properties.

(6) Requirements. All materials, dimensions, strengths, qualities, and test requirements shall meet the applicable ASTM requirements. All material used shall be new and shall be protected from any long exposure to the sun.

(7) Inspections. Inspection of the material shall be made as agreed upon by the purchaser and the seller as part of the purchase contract.

(8) Certification. When agreed upon in writing by the purchaser and the seller the certification shall be made the basis of the acceptance of the material. This shall consist of a copy of the manufacturer's test report or a statement by the seller, accompanied by a copy of the test results, that the material has been sampled, tested, and inspected in accordance with the provisions of the specification. Each certification so furnished shall be signed by an authorized agent of the seller or manufacturer. Copies will be furnished to the City.

(9) Marking. Pipes in compliance with this standard shall be clearly marked at intervals of five feet or less. The marking on SDR 35 shall be:

(a) Manufacturer's quality;

(b) Nominal pipe size;

(c) PVC 12454-B;

(d) SDR (Number);

(e) PSP sewer pipe;

(f) Appropriate ASTM number;

(g) Extrusion code.

(C) Sewer Appurtenances.

(1) Testing of Gravity Sewer Lines. Gravity sewer lines shall show not more than 200 gallons infiltration per day, per mile of pipe, per inch nominal diameter. In areas where the ground water level is above the top of the pipe for the entire length of the sewer being tested, the infiltration shall be measured into the pipe to determine if it meets infiltration requirements. In areas where the ground water level is below the top of the pipe the contractor shall perform an exfiltration or leakage test to provide the City an indication of the condition of the completed system. After capping and blocking all wyes or tees, the pipe between successive manholes shall be filled with water, including the upstream manholes, to not less than four feet nor more than eight feet above the lowest point of the sewer section being tested. The amount of water level shall be measured, and it shall not exceed a rate of 200 gallons exfiltration per day, per mile of pipe, per inch nominal diameter. Any one individual section may exceed the rate by one and one-half times if the total length does not exceed the above rate. The program of testing must be mutually determined by the Engineer and the contractor. The contractor shall furnish all labor, tools, and equipment necessary to make the tests and to perform any work incidental thereto. The contractor shall take all necessary precautions to prevent any joints from separating, or other damage to the system while the pipelines or their appurtenances are being tested. He shall, at his own expense, correct any excess leakage and repair any damage to the pipe and its appurtenances or to any structures indicated by or resulting from these tests. If any section tested fails the test, it shall be repaired or replaced and retested at the contractor's expense, until the measured leakage is within the allowable limits. Prior to the issuance of building permits and preceding the final warranty release of contingency improvement funding the City will require the developer or his selected contractor to perform a flush cleaning and CCTV video inspection of the sanitary sewer pipes to confirm pipe workmanship and perpetuation of City and American Society of Testing and Materials (ASTM) design and construction requirements. The City may require follow-up video inspections to confirm necessary repairs have been completed from previous inspections.

(2) Deflection and Air Testing of Sewer Lines. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of five pounds per square inch (34.5 kPa) or sufficient to balance a column of mercury 10 inches (254 mm) in height. The pressure shall be held without introducing additional air for a period of at least 15 minutes. In addition to the air test of the sewer line, a deflection test will also be required. The deflection test shall be made by positioning a multisize and stationary type deflection test gauge within a standard flexible sewer pipe. Each multisize gauge utilized for testing shall be five percent smaller in diameter than the inner walls of the pipe to be tested. The gauge will be placed within the sewer pipe and then vac-

uum pulled from one manhole to the next to locate any deflection problems.

(3) Wye Branches. Wye branches or junctions for house connections shall be four inches in diameter, and shall be installed in the sewer at such locations as the Engineer may direct. Wye branches shall be elevated so that the flow line of the wye is level with the centerline of the pipe. Each wye, not used in connecting present laterals, shall be sealed by means of a suitable plug of the same material as the pipe and sealed with joint compound one-fourth inch deep over the plug.

(4) Manholes.

(a) General. This item shall consist of the construction or installation of concrete manholes of the various types and diameters shown on the plans and at the designated locations. The item shall include: ring and cover, steps, and all other incidentals necessary to fully complete the manholes.

(b) Precast Manholes. Precast manholes shall consist of sections of rings of tongue and grooved reinforced concrete pipe on a cast in place foundation. Both circular and conical sections shall meet the requirements of "Reinforced Concrete Sewer Pipe (ASTM Specifications C-75)."

Approved eccentric manholes with rungs will be accepted. Concentric manholes will not be accepted.

The precast base section shall be recessed on the bottom edge to receive the pipe entering the manhole. The base section shall extend at least two inches into the concrete of the floor. When practical the base section shall be set in position before the floor is poured; in any case the base section shall be imbedded in the floor before the concrete has taken its initial set.

Joints between sections shall be set in: (i) cement grout; or (ii) asphaltic sewer joint compound. Joints shall be watertight.

(c) Manhole Covers. The contractor will furnish and install the cast iron frame and cover shown on the plans as a part of the manhole.

(d) Castings, Quality of Metal. All castings shall be made of good quality cast iron, strong, tough, straight-grained and free from flaws, cracks, blow holes or other defects and of exact form and dimensions shown on the plans. They shall be evenly and firmly set and imbedded as to afford the chance of any movement. The seats and bearings of all frames and covers shall be machine faced and shall fit evenly and firmly and so made as to be interchangeable. Iron shall conform to "Standard Specifications for Gray Iron Castings" ASTM Specification A-48-48 or Class 30.

(e) Grade. Necessary adjustment to bring the cover to finished street grade shall be required.

(f) Manhole Ladders. Manhole ladder steps as shown on manhole plans shall be formed from three-fourths inch mild steel bar coated with polyethylene or cast iron rungs.

(g) Stubs in Manholes. Stubs in manholes shall be flexible rubber boots with stainless steel straps.

(h) Revisions to Existing Manholes. All work required to revise or modify existing manholes, in connection with this project, as shown on the plans, or as directed by the Engineer, necessary to complete the project shall be done by the contractor and no extra compensation shall be allowed for this work. This work shall include such incidentals as raising manhole floors, providing drop type inverts, new invert openings, etc.

(5) Service Lines. Any sewer laterals that may be extended beyond the branch in the main by the contractor during the construction shall be subject to all the requirements of these specifications for the construction of the main line sewer. Cementing of joints will be allowed.

The contractor shall be fully responsible for any leaks in the sewer laterals, to the same extent as if such leaks were in the sewer main.

Sewer service lines shall be connected into the main line with a tee or other fitting manufactured for this purpose. The lateral shall be placed on a two percent slope and shall have cleanouts every 50 feet, at all changes in direction greater than 45 degrees and at drop connections. In the event the main sewer is deeper than required to connect the service line at two percent slope, the service line shall be taken off on a 45 degree angle and then flattened to the minimum slope to the house or user. Service lines for residential connections shall be four inch. The service line will be installed in the upper half of the main line.

(6) Workmanship. The contractor, developer, home builder or others responsible for the work shall provide adequate means, acceptable to the City Inspector, to prevent the entrance of for-

eign materials into the sewer lines via the manholes and service laterals.

Unless otherwise approved the following means of protection shall be used:

Before work is started on street grading and paving jobs where there is a possibility of manhole rings and covers being displaced by equipment, the floor of the manhole shall be completely covered with wood planks, adequately secured to prevent displacement. Individual planks shall have a width greater than the diameter of the sewer pipe. Planking shall remain in place during the life of the job. Upon completion of the work any foreign material that may have entered the manhole shall be removed before the planking is removed.

On resurfacing jobs where it is required that manhole covers be adjusted to new grade, a canvas apron, properly supported or anchored, may be used in lieu of wood planking. In every case such apron or planking shall be in place before the work is started and shall not be removed until the work of adjusting the manhole has been completed.

(7) Final Sewer Cleaning and Inspection. Prior to final acceptance, all parts of the system shall be completely finished and cleaned by the developer. All accumulated construction debris, rocks, gravel, and other foreign material shall be removed from the sewer system at or near the closest downstream manhole. If necessary the contractor shall use mechanical rodding or bucketing equipment. The City Public Works Department shall complete a smoke test of the system to locate cross connections, illegal connections and infiltration points. The City shall notice the home builder or developer of any illegal connections to the sewer system. The home builder shall undertake correction of cross connections, illegal connections, or infiltrations. This shall include cleaning of the cross connected service pipeline acceptable to the City Public Works Department. [Ord. 04-23; Ord. 04-11; Code 1971 Appendix § 9.]

8.45.100 Storm sewers.

(A) Storm Drain Calculations.

(1) Storm drain calculations will be produced using the rational method.

(2) Storm drain design shall follow the 0.2 C.F.S. discharge allowable by Davis County and shall be sized for a 10-year storm without detention, a 50-year storm with minor detention, and a 100-year storm with major detention.

(3) Hydraulic calculations shall be submitted which produce the Composite "C."

(4) Submit copies of the storm intensity/frequency.

(B) Culvert Pipe and Incidental Construction.

(1) Material. All pipe required for the storm sewer shall be standard strength, tongue and groove, reinforced concrete culvert pipe. All culvert pipe shall conform to the American Society for Testing Materials Specifications for Reinforced Concrete Culvert Pipe, latest Designation D-76, or as provided in the special provisions.

Pipe diameters listed in the bid schedule for which no reinforcing requirements have been determined under ASTM specifications shall be reinforced as required for the next diameter larger.

(2) Length of Pipe. Culvert pipe from 10 inches in diameter to 36 inches in diameter shall be at least 36 inches long. Pipe over 36 inches in diameter shall be at least as long as the inside diameter.

(3) Testing of Pipe. Every manufacturer furnishing pipe under these specifications shall furnish all facilities necessary to carry out the tests required in these specifications.

(4) Line and Grade. Line and grade shall be accurately maintained. Laser method is preferred.

(5) Method of Laying Pipe. The first pipe downstream shall be bedded to established line and grade with the groove upstream. A shallow excavation shall be made underneath the pipe at the joint, this space to be filled with mortar, into which the end of the second pipe beds when laid. The groove end of the first pipe must be thoroughly cleaned with a wet brush and a layer of soft mortar applied to the inside of the groove. The tongue end of the second pipe must be thoroughly cleaned with a wet brush and while in a horizontal position a layer of soft mortar is then inserted into the groove end of the first pipe until the mortar is squeezed out on the interior and exterior surfaces. The interior surface of the pipe joint over 18 inches in diameter shall be brushed smooth and under 18 inches in diameter wiped smooth.

All concrete culvert pipe shall have gasket joints, which operation shall be carried on several joints behind the laying operation. The outer surface of the pipe must be thoroughly cleaned with a

wet brush. As the band is carried up around the lower half of the pipe, an earth support is provided to prevent its falling off. At a point somewhat below spring line of the pipe, this operation may be discontinued. The band on the upper half of the pipe requires no support. Bands shall be at least one-half the thickness of the shell of the pipe and for four inches to six inches wide.

(6) Rubber Gasket Joints. Gaskets shall conform to ASTM D-412.

(C) Structures.

(1) Definition. All items listed in the bidding schedule as cleanout boxes, inlet boxes and junction boxes shall be designated as structures.

(2) Concrete. Concrete for all structures shall be as outlined in SCC 8.45.030.

(3) Finishing. Upon removal of the forms, all the tie wire holding the forms shall be cut flush with concrete face and any rough or irregular surfaces found to exist shall immediately be repaired to the satisfaction of the Engineer. Surface not exposed to view need not be finished, unless otherwise shown on the plans. Unless otherwise shown on the plans, exposed surfaces of structures shall be finished to conform to the finish of the adjacent concrete. Surfaces over which asphalt paving is to be placed shall be rodded off to the neat lines. Surfaces exposed in concrete paving shall be given a float finish and surfaces exposed in curb and gutter areas shall be finished as prescribed for curb and gutter. An edging tool shall be used on all exposed corners to properly shape and finish the concrete.

(D) Waterways.

(1) Description. Waterways shall include the construction of box culverts and flumes, the finishing and placing of concrete and metal pipe culverts and other types of culverts specified, in street sections, or in ditches paralleling streets, the construction of cleanout boxes and the furnishing and placing of cleanout frames and covers, and the construction of head gates and diversion works and all other work incidental thereto, in accordance with the plans and these specifications.

(2) Concrete Box Culverts, Flumes and Cleanout Boxes, Etc. Concrete waterways shall be constructed from concrete, to the dimensions and at the locations shown on the plans, or according to the stakes set by the Engineer. The provisions of SCC 8.45.030, Portland cement concrete, shall apply to the construction of waterways. Concrete waterways shall be reinforced as shown on the plans.

(3) Reinforced Concrete Pipe. Reinforced concrete pipe shall meet the requirements of "Standard Specifications for Reinforced Concrete Culvert Pipe ASTM Designation C-76. (Latest ASTM Designation C-76.)"

(4) Plain concrete pipe shall not be used.

(5) Corrugated Metal Pipe (CMP). Corrugated metal pipe in quality and sizing shall be in compliance with the regulations and design criteria in "Handbook of Steel Drainage and Highway Construction Products," published by the American Iron and Steel Institute, or as specified on an approved set of plans and shall meet the requirements of AASHTO Specification M-36.

(6) Placing and Covering. Pipe shall be placed at the locations shown on the plans or as directed by the Engineer and shall be laid true to line and grade. The width of the trench in which the pipe is laid shall be sufficient to permit thorough tamping under the haunches of the pipe. The pipe shall be bedded in an earth foundation of uniform density, and carefully shaped to the proper grade. Where rocks or boulders are encountered in the formation it shall be removed and replaced with granular material to a sufficient depth to provide a uniform cushion under the pipe.

Where a firm foundation is not encountered at the established grade due to spongy or unstable soil, additional excavation shall be made as directed by the Engineer, and backfilled with suitable material adequately compacted to form a firm foundation for the pipe.

Select material free from rocks and clods shall be used for backfill and shall be placed in layers not exceeding six inches in thickness and thoroughly compacted by tamping to the finished grade of the street.

(7) Cleanout Frames and Covers. Cleanout frames and covers shall be furnished and installed at the various locations shown on the plans, or as may be directed by the Engineer.

(8) Final Cleaning. Prior to final acceptance, all parts of the storm drain system shall be completely finished and cleaned by the developer. All accumulated construction debris, rocks, gravel, and other foreign material shall be removed from the storm drain system at or near the closest downstream manhole or cleanout structure. If necessary

the contractor shall use mechanical rodding or bucketing equipment.

(E) Detention Facilities. Detention facilities shall meter water at 0.2 cfs per acre. Detention facilities shall be designed as follows:

(1) Side slopes shall be 3:1 maximum.

(2) Designed for 50-year storm or as determined by City Engineer.

(3) Vehicular maintenance access around the entire basin (minimum 10-foot width).

(4) Vehicular access to basin.

(5) Where possible, lot shall provide normal frontage requirements.

(6) Pressurized irrigation system and landscaping compatible with the surrounding area.

(7) Flow-through design that eliminates a "wet basin."

(8) Cross slope within basin shall provide adequate drainage.

(9) Inlet and outlet boxes shall be grated, with extended swale construction extending from outlet structure into the basin to eliminate nuisance flows and water accumulation.

(10) Where possible, detention basins shall be incorporated into useable park property. [Ord. 04-11; Code 1971 Appendix § 10.]

8.45.110 Land drains.

(A) Concrete Pipe.

(1) Description. Land drains shall include the performance of all operations necessary to lay land drain pipe mains, wye branches, individual land drain mains to manholes, test mains for leaks and all incidental work necessary to complete the work in a satisfactory manner.

(2) Pipe. All pipe for the land drain mains shall be bell and spigot. The type of pipe the contractor proposes to install shall have the approval of the City Engineer before work commences. No interchanging of type of pipe will be allowed.

(3) Nonreinforced Concrete Pipe. Nonreinforced concrete land drain pipe shall conform to Concrete Pipe ASTM Designation C-14-56.

(4) Reinforced Concrete Pipe. Reinforced concrete land drain pipe shall conform to the requirements for "Reinforced Concrete Pipe: ASTM Designation C-75556." Cement used in the pipe shall conform to Type 11A (the air entraining agent shall be interground at the mill), low alkali cement, conforming to Federal Specifications, 192a, of ASTM Designation C-15C-53.

(5) Length of Pipe. Pipe 36 inches in diameter and under shall be at least 36 inches long except specials. Pipe over 36 inches in diameter shall be at least as long as the inside diameter. The maximum length of pipe shall be 24 feet.

(6) Testing. Random samples of pipe and all fittings and specials such as short radius bands, wyes and toes shall be tested as specified for the type of pipe being used.

(7) Laying. No pipe shall be laid under any circumstances until the pipe has been tested, and the samples selected have satisfactorily passed the requirements. All pipe shall be laid upgrade from structure, unless otherwise expressly permitted by the Engineer, with the bell end of the pipe upgrade. All pipe shall be laid true to line and grade, with a uniform bearing under the full length of the barrel of the pipe, and suitable excavation shall be made to receive the bell of the pipe. All adjustments to grade shall be made by scraping away or tamping earth under the pipe. Wedging or blocking under the hub will not be permitted. As each unit of pipe is laid a sufficient amount of selected backfill materials shall be carefully placed and thoroughly tamped around the lower portion of the pipe to hold it firmly in position. If adjustment of the position of a length of pipe is required after it has been laid, it shall be removed and rejoined as for a new pipe. When laying is not in progress the ends of the pipelines shall be kept closed to prevent the entrance of foreign material.

(8) Rubber Gasket Joints. Pipe for rubber gasket joints shall be of the bell and spigot type, detail of the type the contractor proposes to use shall be furnished and must have the approval of the City Engineer before the work is to be commenced. The joint shall be so designed as to provide for self-centering and when assembled, to compress the gasket to form a watertight seal. The pipe design and gasket shall be such that movement of the pipe or hydrostatic pressure cannot displace the gasket. In order to assure watertightness the clearance between the inner surface of the bell and the outer surface of the spigot, as well as the dimensional tolerances of this annular space, shall be such that the gasket residual deformation is neither less than 20 percent nor more than 45 percent

when the spigot is seated to the full depth of the bell socket.

(9) Rubber Gaskets. The rubber gasket for use on pipe shall be cured in such a manner that any cross-section will be dense, homogeneous, and free from porosity and other imperfections. The gasket shall be extruded or molded to the specific size within a tolerance of plus or minus one thirty-second of an inch at any cross-section of the gasket. The gasket shall be fabricated from a high-grade tread-type compound. The basic polymer shall be natural rubber, or a copolymer of butadiene-styrene synthetic. The compound shall contain no factice and shall have the following characteristics:

Tensile strength, pounds per square inch, minimum	2,300
Elongation at break, percent, minimum	425
Shore durometer (Type A)	40 to 60
Absorption of water, by weight, two days at 70 degrees Celsius, percent maximum	5
Compression set (constant deflection), percent of original deflection, maximum	20
Tensile strength after oxygen bomb aging (48 hours, 158 degrees Fahrenheit, 300 per square inch), percent of tensile strength before aging, minimum	80
Increase in shore durometer hardness after oxygen bomb aging, maximum increase over original shore durometer	8
Acetone, extract, percent, maximum	15

The physical properties of the rubber compound shall be determined by tests performed in accordance with appropriate sections of Federal Specifications ZZ-R-601a, except for shore durometer and compression set. All tests for compression set shall be made in accordance with method B, ASTM Designation D-395 for compression set of vulcanized rubber under constant deflection. Tests for shore durometer shall be made in accordance with ASTM Designation D-767. The contractor shall furnish certified copies of test reports as evidence of the rubber compound used in all rubber gaskets before any gaskets are used to join pipes. All rubber shall be stored in as cool a place as practicable, preferably at 70 degrees or less, and in no case shall the rubber for joints be stored exposed to the direct rays of the sun. All rubber gaskets shall be stored so as to permit free circulation of air about the rubber.

In all cases during the laying of the pipe extreme care must be taken to ensure that the rubber gaskets are properly fitted in place and continually free from twisting and unusual displacement.

(B) Poly (VinylChloride) Pipe (PVC).

(1) General. This specification covers requirements for PVC pipe and fittings to be furnished for land drains.

Pipe and fittings produced to the standards below should be installed in accordance with ASTM recommended practice D-2321, underground installation of flexible thermoplastic land drain pipe. The plastics nomenclature used in the specifications is in accordance with the definitions given in nomenclature D-883, unless otherwise indicated.

(2) Applicable Documents. PVC land drain pipe furnished under this specification shall meet the following ASTM standards: D-256, Impact Strength; D-638, Tensile Strength and Modulus of Elasticity; D-648, Deflection Temperature under Load of 264 psi; D-1784, Specifications for Rigid Poly (VinylChloride) Compounds and Chlorinated Poly (VinylChloride) Compounds; D-3034 (SDR 35) Type PSP Poly (VinylChloride) (PVC) Land Drain Pipe and Fittings. The requirements of this specification are intended to provide pipe fittings suitable for nonpressure drainage of sewage.

(3) Materials. Basic materials of the pipe and fittings shall be PVC plastic having a self-classification of 12454-B and shall meet the minimum physical properties and chemical resistance of the PVC compound as defined in ASTM D-1784.

(4) Connection Joints. All sizes and classifications of PVC gravity land drain pipe shall have joints utilizing rubber gaskets for sealing. Gaskets shall meet specifications defined in ASTM D-2000-AA820, ASTM 2000-AA625 and ASTM D-1869.

(5) Workmanship. The pipe and fittings shall be homogeneous throughout and free from visible cracks, holes, foreign inclusions or other injurious defects. The pipe shall be as uniform as commer-

cially practical in color, density, and other physical properties.

(6) Requirements. All materials, dimensions, strengths, qualities, and test requirements shall meet the applicable ASTM requirements. All material used shall be new and shall be protected from any long exposure to the sun.

(7) Inspections. Inspection of the material shall be made as agreed upon by the purchaser and the seller as part of the purchase contract.

(8) Certification. When agreed upon in writing by the purchaser and the seller the certification shall be made the basis of the acceptance of the material. This shall consist of a copy of the manufacturer's test report or a statement by the seller, accompanied by a copy of the test results, that the material has been sampled, tested, and inspected in accordance with the provisions of the specification. Each certification so furnished shall be signed by an authorized agent of the seller or manufacturer. Copies will be furnished to the City.

(9) Marking. Pipes in compliance with this standard shall be clearly marked at intervals of five feet or less. The marking on SDR 35 shall be:

(a) Manufacturer's quality;

(b) Nominal pipe size;

(c) PVC 12454-B;

(d) SDR (number);

(e) PSP pipe;

(f) Appropriate ASTM number;

(g) Extrusion code.

(C) Land Drain Appurtenances.

(1) Testing of Gravity Lines. Gravity land drain lines shall show not more than 200 gallons infiltration per day, per mile of pipe, per inch nominal diameter. In areas where the ground water level is above the top of the pipe for the entire length of the land drain being tested, the infiltration shall be measured into the pipe to determine if it meets infiltration requirements. In areas where the ground water level is below the top of the pipe the contractor shall perform an exfiltration or leakage test to provide the City with an indication of the condition of the completed system. After capping and blocking all wyes or tees, the pipe between successive manholes shall be filled with water, including the upstream manholes, to not less than four feet nor more than eight feet above the lowest point of the land drain section being tested. The amount of water added during the test period from the section under test to maintain the water level shall be measured, and it shall not exceed a rate of 200 gallons exfiltration per day, per mile of pipe, per inch nominal diameter. Any one individual section may exceed the rate by one and one-half times if the total length does not exceed the above rate. The program of testing must be mutually determined by the Engineer and the contractor. The contractor shall furnish all labor, tools and equipment necessary to make the tests and to perform any work incidental thereto. The contractor shall take all necessary precautions to prevent any joints from separating or other damage to the system while the pipelines or their appurtenances are being tested. The contractor shall, at his own expense, correct any excess leakage and repair any damage to the pipe and its appurtenances, or to any structures indicated by or resulting from these tests. If any section of pipe fails the test, it shall be repaired or replaced and retested at the contractor's expense, until the measured leakage is within the allowable units.

(2) Air Testing of Lines. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening, and after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of five pounds per square inch (34.5 kPa) or sufficient to balance a column of mercury 10 inches (254 mm) in height. The pressure shall be held without introducing additional air for a period of at least 15 minutes.

(3) Wye Branches. Wye branches or junctions for house connections shall be four inches in diameter, and shall be installed in the land drains at such locations as the Engineer may direct. Wye branches shall be elevated so that the flow line of the wye is level with the centerline of the pipe. Each wye, not used in connecting present laterals, shall be sealed by means of a suitable plug of the same material as the pipe and sealed with joint compound one-fourth-inch deep over the plug.

(4) Manholes.

(a) General. This item shall consist of the construction or installation of concrete manholes of the various types and diameters shown on the plans and at the designated locations. The item shall include: ring and cover, steps, and all other incidentals necessary to fully complete the manholes.

(b) Precast Manholes. Precast manholes shall consist of sections of rings of tongue and grooved reinforced concrete pipe on a cast in place foundation. Both circular and conical sections shall meet the requirements of "Reinforced Concrete Pipe (ASTM Specification C-75)."

Approved eccentric manholes with rungs will be accepted. Concentric manholes will not be accepted.

The precast base section shall be recessed on the bottom edge to receive the pipe entering the manhole. The base section shall extend at least two inches into the concrete of the floor. When practical the base section shall be set in position before the floor is poured; in any case the base section shall be imbedded in the floor before the concrete has taken its initial set.

Joints between sections shall be set in: (i) cement grout; or (ii) asphaltic land drain joint compound. Joints shall be watertight.

(c) Manhole Covers. The contractor will furnish and install the cast iron frame and cover shown on the plans as part of the manhole.

(d) Castings, Quality of Metal. All castings shall be made of good quality cast iron, strong, tough, straight grained and free from flaws, cracks, blow holes or other defects and of exact form and dimensions shown on the plans. They shall be evenly and firmly set and imbedded as to afford the chance of any movement. The seats and bearings of all frames and covers shall be machine faced and shall fit evenly and firmly and so made as to be interchangeable. Iron shall conform to "Standard Specifications for Gray Iron Castings" ASTM Specification A-48-48 or Class 30.

(e) Grade. Necessary adjustment to bring the cover to finished street grade shall be required.

(f) Manhole Ladders. Manhole ladder steps as shown on manhole plans shall be formed from three-fourths inch mild steel bar, coated with polyethylene or cast iron rungs.

(g) Stubs in Manholes. Stubs shall be flexible rubber boots with stainless steel straps.

(h) Revisions to Existing Manholes. All work required to revise or modify existing manholes, in connection with the project, as shown on the plans, or as directed by the Engineer, necessary to complete the project shall be done by the contractor and no extra compensation shall be allowed for this work. This work shall include such incidentals as raising manhole floors, providing drop type inverts, new invert openings, etc.

(5) Service Lines. Any land drain laterals that may be extended beyond the branch in the main by the contractor during construction shall be subject to all the requirements of these specifications for the construction of the main line land drains. Cementing of joints will be allowed.

All service lines shall be white in color, stubbed 10 feet beyond the property line, tagged and labeled "Land Drain," capped or plugged with a two-inch by four-inch clearly marking the location of the lateral stub.

The contractor shall be fully responsible for any leaks in the land drain laterals to the same extent as if such leaks were in the land drain mains.

Service lines shall be connected into the main line with a tee or other fitting manufactured for this purpose. The lateral shall be placed on a two percent slope and shall have cleanouts every 50 feet, or at all changes in direction greater than 45 percent and at drop connections. In the event the main land drain is deeper than required to connect the service line at a two percent slope, the service line shall be taken from a 45 degree angle and then flattened to the minimum slope to the house or user. Service lines for residential connections shall be four inch. The service line will be installed in the upper half of the main line.

Roof drainage structures, storm gutters, or other aboveground collection points are prohibited from connecting to or discharging storm water into City underground land drains or field drain main service lines.

New residential dwellings constructed within subdivisions containing a land drain system are required to make connection via a service lateral stubbed to the dwelling foundation footing and connected to the main land drain line owned by the City.

(6) Workmanship. The contractor or others responsible for the work shall provide adequate means, acceptable to the City Inspector, to prevent the entrance of foreign materials into the land drain lines via the manholes.

Unless otherwise approved the following means of protection shall be used:

(a) Before work is started on street grading and paving jobs where there is a possibility of manhole rings and covers being displaced by

equipment, the floor of the manhole shall be completely covered with wood planks, adequately secured to prevent displacement. Individual planks shall have a width greater than the diameter of the land drain pipe. Planking shall remain in place during the life of the job. Upon completion of the work any foreign material that may have entered the manhole shall be removed before the planking is removed.

(b) On resurfacing jobs where it is required that manhole covers be adjusted to a new grade, a canvas apron, properly supported or anchored, may be used in lieu of wood planking. In every case such apron or planking shall be in place before the work is started and shall not be removed until the work of adjusting the manhole has been completed.

(c) Permanent fiberglass catches under land drain lids shall be installed to prevent gravel and dirt from getting into the system.

(7) Final Cleaning. Prior to final acceptance, all parts of the system shall be completely finished and cleaned by the developer. All accumulated construction debris, rocks, gravel, and other foreign material shall be removed from the land drain system at or near the closest downstream manhole. If necessary the contractor shall use mechanical rodding or bucketing equipment. [Ord. 04-11; Code 1971 Appendix § 11.]

8.45.120 Secondary water.

(A) Materials.

(1) Flanged Fittings. All flanged fittings shall be in accordance with the current AWWA Specification C-110 for cast iron fittings.

(2) Dresser Couplings. Latest standard style with rubber gasket for water. For diameters four inches to 14 inches middle ring to be a minimum of one-fourth inch thick and five inches long with four and five-eighths inch bolts for four inch diameters; six and five-eighths inch bolts for six and eight inch diameters and eight and five-eighths inch bolts for 10-, 12-, and 14 inch diameters.

(3) Steel Pipe. Steel pipe shall conform to the current AWWA Specification C-201.

(4) Certification of all tests required by the American Water Works Association shall be provided by the manufacturer. The three-edge bearing test will be required, upon request of the Inspector.

(5) All pipe shall be standard lengths except for making connections to valves, fittings, and other such closures.

(6) PVC Pressure Pipe. Pipe shall be standard dimension ration pressure rated PVC pipe (SDR-RP-PVC) conforming to the latest revision of ASTM D-2241 and the National Bureau of Standards Product Standard PS 22-70. The pipe shall be PVC Class 900 pipe and shall meet the requirements of ASTM D-2241 except that the pipe shall have an outside diameter of ductile iron pipe sizes instead of iron pipe sizes. The PVC pipe shall meet the requirements of the AWWA C-900 with pressure clasp of 150 and the D.R. of not less than 18. Pipe shall be bell and spigot, twin gasket. At least 85 percent of the total footage shall be furnished in standard 20-foot lengths.

(7) Replacement of Damaged Material. Any material that becomes damaged shall be replaced by the subdivider at his own expense.

(8) Responsibility for Safe Storage. The subdivider shall be responsible for the safe storage of material furnished by or to him, and accepted by him, and intended for the work, until it has been incorporated in the completed project.

(9) Handling Pipe and Accessories. Pipe, fittings, valves, hydrants, and other accessories shall, at all times, be handled with care to avoid damage. In loading and unloading they shall be lifted by hoists or slid, or rolled on skidways in such manner as to avoid shock. Under no circumstances shall they be dropped. Pipe handled on skidways must not be skidded or rolled against pipe already on the ground. All pipe, fittings, and valves shall be carefully lowered into the trench piece by piece by means of derrick, ropes or other suitable tools or equipment, in such manner as to prevent damage to pipe or pipe coating. Under no circumstances shall pipe or accessories be dropped or dumped into the trench. Pipe shall be handled in such manner that a minimum amount of damage to the coating will result. Damaged coating shall be repaired in a manner satisfactory to the Inspector.

(10) Gate valves shall be iron body, bronze mounted, double disc with nonrising stems with design construction to AWWA C-500, and modifications herein. Stem seals shall be double O-ring seals; valves shall open counterclockwise. Install 24 inches of crushed rock from the bell top of the valve to the trench grade below the valve to pro-

vide proper drainage. Provide two inch square wrench nut for key operation. Operating valve nut shall be within six inches of finished surface grade. Provide mechanical joint ends.

(11) Valve boxes shall be buffalo type, sliding type with base as required for the valve size used and of sufficient length for the specified pipe bury. It shall have the word "sprinkler" or "irrigation" stamped thereon.

(B) Laying Pipe.

(1) General. All pipe shall be laid and maintained to the required lines and grades, with fittings and valves at the required locations. No deviation shall be made from the required line or grade except with the written consent of the Engineer. The contractor will install indicator tape marked "Irrigation Line Buried Below" 12 inches above the top of the irrigation pipe.

(2) Permissible Deflections at Joints. Wherever necessary to deflect pipe from a straight line, either in the vertical or horizontal plane to avoid obstructions, to plumb stems, or where long radius curves are permitted, the degree of deflection shall be approved by the Engineer.

(3) Protecting Underground and Surface Structures. Temporary support, adequate protection and maintenance of all underground and surface utility structures, drains, sewers and other obstructions encountered in the progress of the work shall be furnished by the contractor at his own expense under the direction of the Inspector.

(4) Deviations Occasioned by Other Utility Structures. Wherever existing utility structures or branch connections leading to main sewers or to main drains, or other conduits, ducts, pipes, or structures present obstruction to the grade and alignment of the pipe, they shall be permanently supported, removed, relocated or reconstructed by the contractor through cooperation with the City. In those instances where their relocation or reconstruction is impracticable, a deviation from line and grade will be ordered, and the change shall be made in the manner directed by the Engineer. Connections to private residences shall be cut and looped around the pipeline.

(5) Pipe Kept Clean. All foreign matter or dirt shall be removed from the inside of the pipe before it is lowered into its position in the trench, and it shall be kept clean by approved means during and after laying.

(6) Bell Ends to Face Direction of Laying. Unless otherwise directed, pipe shall be laid with bell ends facing the direction of laying, and for lines on an appreciable slope, bells shall, at the discretion of the Engineer, face upgrade.

(7) Preventing Trench Water from Entering Pipe. At times when pipe laying is not in progress, the open ends of pipe shall be closed by approved means, and no trench water shall be permitted to enter the pipe.

(8) Cutting Pipe. Cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner without damage to the pipe.

(9) Pipe Jointing. Jointing of all pipe shall be as recommended by the manufacturer. All pipes shall be handled in such a way so as to prevent damage to the coating and lining. Refer to backfilling specifications for proper bedding and compaction. Thrust blocking shall be applied at all tees, plugs, caps and at bends deflecting 22.5 degrees or more. Prevention of concrete adhesion by means of 10 mil plastic sheeting to protect valves or pipe material shall be directed by the City Inspector.

(10) Pipe shall be laid so as to drain back into the main system when system is out of service. Additional drain lines or blow off valves will be required where gravity draining may not be possible.

(11) Indicator Tape. Indicator tape shall be placed a minimum of 12 inches above the laid pipe to identify the water line for future excavations. A 12 gauge locater wire shall be installed to aid in locating the pipe for identification. The City Public Works Department shall oversee the connection points of the locator wire.

(C) Setting Valve and Fitting.

(1) Location. Gate valves and fittings shall be located as shown on the plans or as directed by the Engineer.

(2) Valve Boxes and Valve Pits. Cast iron valve boxes shall be firmly supported, and maintained centered and plumb over the wrench nut of the gate valve, with box cover flush with the surface of the finished pavement or at such other level as may be directed. Valve box lid shall be stamped "Sprinkler."

(3) Plugging Dead Ends. Standard plugs shall be inserted into the bells of all dead ends of

pipe, toes or crosses and spigot ends shall be capped.

(4) Anchorage of Toes, Tees, and Plugs. Reaction or thrust blocking shall be applied on all pipelines four inches in diameter or larger at all tees, plugs, caps and at bends deflecting 22.5 degrees or more, or movement shall be prevented by attaching suitable metal rods or straps as directed by the Engineer. Thrust block size shall be determined by the subdivider's engineer and shall be shown on the plans.

(5) Material for Reaction Backing. Reaction or thrust blocking shall be of concrete having compressive strength of not less than 2,000 psi. Blocking shall be placed between solid ground and the fitting to be anchored. The area of bearing on pipe and on ground in each instance shall be that required by the Engineer. The blocking shall be so placed that the pipe and fitting joints will be accessible for repair. The pipe shall be protected from the thrust block by a layer of 10 mil plastic.

(6) Blow-off and drain valves shall be installed on dead-end or low elevation point connection lines in accordance with requirements and specifications of the City.

(D) Hydrostatic Tests.

(1) Pressure During Test. After the pipe has been laid and partially backfilled, all newly laid pipe, or any valved section of it, shall, unless otherwise specified, be subjected to maximum operating pressure.

(2) Duration of Pressure Test. The duration of each pressure test shall be at least 30 minutes at 150 psi.

(3) Procedure. Each valved section of pipe shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a satisfactory manner. The pump, pipe connections and all necessary apparatus shall be furnished by the contractor.

(4) Expelling Air Before Test. Before applying the specified test pressure, all air shall be expelled from the pipe. To accomplish this, taps shall be made, if necessary, at points of highest elevation, and afterward tightly plugged.

(E) Cleaning Water Mains. The mains shall be flushed thoroughly. Flushing shall be done after the pressure test is made. It must be understood that such flushing removes only the lighter solids and cannot be relied upon to remove heavy material allowed to get into the main during laying.

Unless extreme care and thorough inspection is practiced during the laying of water mains, small stones, pieces of concrete, particles of metal, or other foreign material may gain access to mains newly laid or repaired. [Ord. 04-11; Code 1971 Appendix § 12.]

8.45.130 Roadway lighting.

(A) General. All outdoor artificial street illuminating devices shall be installed in conformance with the provisions of this section and applicable provisions of the zoning ordinance, subdivision ordinance, and the current electric and electric safety codes adopted by the state of Utah. The spacing and arrangement of street lights will be designed during the preliminary plat or sight plan review phases of a development and shall be a minimum of one light per every 800 feet of roadway, every 400 feet of cul-de-sac depth and at every roadway intersection.

(B) Approved Materials and Methods of Installation. The provisions of this section are to prevent the use of any material or method of installation not specifically prescribed by this section. The City Council must approve any proposed alternatives.

(1) Type and Style of Lights. Street lights shall be purchased by the developer and may be either the "Grand Ville" with trim tabs (Series 1) with a 14 foot Charleston pole or "Grande Ville" (Series 2) with a 14 foot Salem pole.

(2) Lamp Source. High pressure sodium is the lamp source that will be utilized throughout the City for all roadway lighting.

(3) Deviations. Any material or method of installation not specifically prescribed in this section will be evaluated by the City Council as stated above, for approval based on the following criteria:

(a) It provides equivalence to the applicable specific requirements of this section.

(b) It is otherwise satisfactory in complying with the intent of this section.

(c) The plans, and variants to this section for proposed lighting schemes, will be submitted to the Community Development Department for approval, and shall be sufficiently complete, with all variants from this section noted, to enable the City Council to readily determine whether compliance with the intent of this section will be secured.

(4) Variances. Any person desiring to install an outdoor lighting fixture in violation of this section may apply to the City Council with recommendation from the Planning Commission for a variance from the regulation in question.

(C) Roadway Lighting.

(1) Nondecorative Poles and Heads. Nondecorative poles and heads shall only be utilized in the City where, upon the recommendation of the Planning Commission and approval of the City Council, a specific lighting plan has been approved.

(a) All roadway pole-mounted fixtures shall not be mounted above 30 feet, as measured from the top of the fixture to the adjacent grade of the horizontal plane being lit by the fixture.

(b) The fixture should house a high-pressure sodium lamp, with a cut-off lens and no more than 150 watts/pole.

(2) Decorative Poles and Heads. Decorative poles and heads shall be installed as outlined on plans approved through the Community Development Department.

(a) All decorative roadway pole-mounted fixtures shall not be mounted above 18 feet, as measured from the top of the fixture to the adjacent grade of the horizontal plane being lit by the fixture.

(b) The fixture should house a high-pressure sodium lamp, with no more than 150 watts/pole.

(c) Decorative roadway application fixtures should utilize highly refractive globes, which have a minimum of 85 horizontal and 345 vertical prisms, to evenly direct the light, and evenly diffuse the light source. The fixture should have the ability to have internal light-directing reflectors that can be field-installed after fixture installation, to accommodate customization of the lighting output, and/or to redirect unwanted light to the traffic area.

(d) The fixture should have photometrics, so that when used on a 40-foot-wide road and placed on opposing 180-feet spacing, mounted on an 18-foot pole with a Type III distribution and 150 watt HPS head, the following horizontal foot-candles should be produced on the roadway (using a 1.85 light loss factor):

(i) Average maintained equals one foot-candle or more.

(ii) Maintained minimum equals 0.4 foot-candles or more.

(iii) Maximum/minimum uniformity equals 4.54 or less.

(e) At 40 feet away from the pole, the roadway should not have less than 0.1 horizontal foot-candle minimum maintained at any point on the road and one and one-half vertical foot-candles, as measured from ground level to six feet above the ground, in the middle of the road.

(f) The refractor should be made of acrylic, and should be available in Type III and IV distributions, with a reflector in the top to eliminate uplight and redirect the light downward toward the surface, and a house light shield. It sets in die-cast aluminum polyester powdercoated pod, which will allow easy access to all of the internal electrical components. It should have internal twist-lock style photocell receptacle when needed, and quick-release wiring components on the socket, ballast, and igniter, with a ground fault interrupted outlet mounted on the pod. Approved manufacturers are as follows:

(i) Hadco Streetscapes Refractive Globes UT33A150SE-150HPS style or equal.

(g) Light posts shall be 16 feet tall, five-inch by three-inch smooth tapered aluminum pole with a 0.125-inch wall thickness. Bolt circle shall be 14-inch diameter, four bolts, 90 degrees apart, with a decorative base 12.75 inches square by 45 inches high, with a three-inch outside diameter fitter. Aluminum is to be polyester powdercoated black.

(i) Hadco Streetscapes Posts 2520 style or equal.

(3) Road Light Levels. Roadway lighting maximum levels (as measured at the horizontal plane being lit).

(a) The maximum point should not exceed six foot-candles within the circulation area being lit.

(b) The average light level should not exceed one foot-candle within the circulation area being lit.

(c) No more than one foot-candle will be allowed outside of 20 feet of the circulation area being lit.

(d) No more than 0.05 foot-candles will be allowed outside the property lines of the easement.

(e) No more than 0.01 foot-candles should be allowed to spill on any residential property as a result of another party lighting their own property.

(D) Wiring.

(1) Lamp and Pole Wiring. All internal wiring of the lamps shall be accomplished at the manufacturer's facilities. No alterations or modifications shall be accomplished as part of the installation of the lamps.

(2) Applicable Codes. All underground wiring shall be accomplished in accordance with the current electrical code adopted by the state of Utah.

(3) Wire or Cable. Wire shall be a minimum eight gauge copper wire and shall have appropriate coatings as required by the current electrical code. Wire and cable placed in conduit or direct burial shall be rated for the applicable use.

(4) Ground. Pole will be grounded to grounding rod set in the footing as outlined in the standard drawings. Neutral lines shall not be connected to the pole.

(5) Depth of Bury. Direct burial cable conductors and nonmetallic raceways shall be a minimum of 24 inches below the top back of curb or finished grade, whichever is lower. All cable or conduit shall be inside a raceway where less than 24 inches below the top back of curb or finished grade. Cables, conductors, and raceways shall have their location identified by a warning ribbon that is placed in the trench at least 12 inches above the underground installation.

(6) Splices and Taps. Buried conductors or cables, either contained in a nonmetallic raceway or direct bury, shall have no splices or taps.

(7) Backfill. Backfill that contains large rocks, paving materials, cinders, large or sharply angular substances, or corrosive materials that may damage raceway, cables, or conductors or prevent adequate compaction of fill or contribute to corrosion of raceways, cables, or conduits shall not be utilized.

(8)(1) Raceway Seals. Conduits or raceways through which moisture may contact energized live parts shall be sealed or plugged at both ends. [Ord. 04-11; Ord. 02-19; Code 1971 Appendix § 13.]

COUNCIL AGENDA
July 14, 2015

Agenda Item **#8** Public Hearing – Proposed Ordinance 15-15 amending Title Three of the Syracuse City Code pertaining to the Museum and Cultural Center Board.

Factual Summation

- Any question regarding this agenda item may be directed at Brody Bovero, City Manager
- The Museum and Cultural Center Board's purpose is to identify, preserve, protect, and enhance historic artifacts associated with the City and its residents and other items of historical significance.
- The current wording of Chapter 3.40 in the Syracuse City Code states that the Board shall consist of between five and nine members.
- Mayor Palmer has proposed that the number of members on the Museum and Cultural Center Board shall be changed from between five to nine members to seven members.
- Please see the attached documentation that has been revised and provided for your review.

ORDINANCE NO. 15-15

AN ORDINANCE OF THE SYRACUSE CITY COUNCIL AMENDING TITLE III OF THE SYRACUSE CITY MUNICIPAL CODE, RELATING TO THE MUSEUM AND CULTURAL CENTER BOARD.

WHEREAS, The Museum and Cultural Center Board's purpose is to identify, preserve, protect, and enhance historic artifacts associated with the City and its residents and other items of historical significance; and

WHEREAS, The current wording of Chapter 3.40 in the Syracuse City Code states that the Board shall consist of between five and nine members; and

WHEREAS, Mayor Palmer has proposed that the number of members on the Museum and Cultural Center Board shall be changed from between five to nine members to seven members.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF SYRACUSE CITY, DAVIS COUNTY, STATE OF UTAH, AS FOLLOWS:

Section 1. Amendment. Section 3.40 of Title Three of the Syracuse City Municipal Code is hereby amended to read in its entirety as follows:

> **3.40.020 Museum and Cultural Center Board.**
> A Museum and Cultural Center Board is hereby established by the City with the following provisions:
> (A) Number and Qualifications. The Board shall consist of ~~between five and nine~~ seven members. Each Board member should demonstrate interest, competence, and knowledge in the operation and function of the Syracuse Museum and Cultural Center.

Section 2. Severability Clause. If any section, part of provision of this Ordinance is held invalid or unenforceable, such invalidity or unenforceability shall not affect any other portion of this Ordinance, and all provisions, clauses and words of this Ordinance shall be severable. This Section shall become effective without codification.

Section 3. Effective Date. This Ordinance shall become effective immediately upon publication or posting.

PASSED AND ADOPTED BY THE CITY COUNCIL OF SYRACUSE CITY, STATE OF UTAH, THIS 14th DAY OF JULY, 2015.

SYRACUSE CITY

ATTEST:

_____ _____

Cassie Z. Brown, City Recorder Terry Palmer, Mayor

Voting by the City Council:

	"AYE"	"NAY"
Councilmember Peterson	_____	_____
Councilmember Lisonbee	_____	_____
Councilmember Duncan	_____	_____
Councilmember Johnson	_____	_____
Councilmember Gailey	_____	_____

COUNCIL AGENDA

July 14, 2015

Agenda Item **#9** **Award Contract for Smedley Acres Culinary Waterline Project Phase 2**

Background

This project will construct both culinary and secondary water mains along 2250 South between 2000 West to 1800 West. It also includes curb, gutter, sidewalk, ramps and asphalt. This project will provide sidewalk connection from Smedley Acres subdivision to 2000 West. This project will also delineate the street from the parking areas with a mountable curb.

Resource

Any supporting questions for staff about this agenda item can be directed to Robert Whiteley.

Schedule

The construction will begin as soon as contract documents are in place and be completed by the winter of 2015.

Cost

The bid opening is on July 13, 2015. Additional information regarding the bid results will be added to the packet when they become available.

The Majority of the funding for this phase of the project will come from a Community Development Block Grant in the amount of $286,295. The remaining funds will come from Class C, Culinary, Secondary, and Storm Drain funds.

Recommendation

Award contract to the responsible low bidder.

COUNCIL AGENDA
July 14, 2015

Agenda Item #**10** Consideration of cancelling August 11, 2015 work session and business meetings in observance of Election Day.

Factual Summation

- Any question regarding this agenda item may be directed at City Recorder Brown.
- Historically the Syracuse City Council has cancelled regularly scheduled meetings that fall on Election Day. The City Recorder is recommending cancelling the August 11 meetings to observe Primary Election Day in Syracuse City. If necessary, special voting meetings can be held on July 28 and August 25 to address any pending action items.