



CITY OF NORTH SALT LAKE

CITY COUNCIL - NOTICE & AGENDA

October 6, 2015

7:00 p.m.

Posted October 1, 2015

Notice is given that the North Salt Lake City Council will hold a regular meeting on **TUESDAY, OCTOBER 6, 2015 at 7:00 p.m.** A work session will be held at 6:00 p.m. in the Council Conference Room at City Hall, followed by the regular session at 7:00 p.m. in the Council Chambers. Some council members may participate electronically. The following items of business will be discussed; the order of business may be changed as time permits.

WORK SESSION - 6:00 p.m.

- 6:00 Welcome
- 6:05 Department Report – Finance
- 6:20 Approve Minutes – September 15, 2015
- 6:25 Action Items
- 6:30 County Commission Visit
- 6:55 Adjourn

REGULAR SESSION - 7:00 p.m.

- 7:00 Introduction by Mayor Len Arave
- 7:02 Invocation and Pledge of Allegiance ~ Council Member Stan Porter
- 7:05 Citizen Comment
- 7:15 Consideration of Resolution No. 2015-25R A Resolution Requesting the Recertification of the City of North Salt Lake Justice Court
- 7:25 Consideration of Resolution No. 2015-27R A Resolution Providing Support for a Special Bond Election to be held on November 3, 2015, for the Issuance of \$298,000,000 General Obligation Bonds to Finance the Costs of Construction and Furnishing Public Schools, Acquiring Land, and other School Related Projects
- 7:35 Consideration of proposed amendments to the City's Interlocal Cooperation Agreement with Jordan River Commission
- 7:45 Presentation on proposed Geologic Hazards Ordinance
- 8:05 Council Reports
- 8:15 Mayor's Report
- 8:20 City Attorney's Report
- 8:25 City Manager's Report – Animal Control
- 8:30 Adjourn into closed session to discuss the purchase or sale of real property
- 8:45 Adjourn

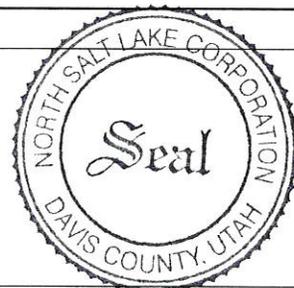
The public is invited to attend all City Council meetings. If you need special accommodations to participate in the City Council meeting, please call the City office at 801-335-8709. Please provide at least 24 hours notice for adequate arrangements to be made.

Notice of Posting:

I, the duly appointed deputy recorder for the City of North Salt Lake, hereby certify that the foregoing agenda was posted on the Utah Public Notice website, at city hall, and sent to the required newspapers this 1st day of Oct., 2015.

Dated this 1st day of Oct., 2015.

Linda Hornsaker



1 NORTH SALT LAKE CITY
2 CITY COUNCIL MEETING-WORK SESSION
3 SEPTEMBER 15, 2015
4

5 **DRAFT**
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7 Mayor Arave called the meeting to order at 6:05 p.m.
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9 PRESENT: Mayor Len Arave
10 Council Member Brian Horrocks
11 Council Member Matt Jensen
12 Council Member Stan Porter
13 Council Member Conrad Jacobson
14 Council Member Ryan Mumford
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16 STAFF PRESENT: Chief Craig Black, Police Chief ; Paul Ottoson, Public Works Director and
17 City Engineer; Jon Rueckert, Assistant Public Works Director; David Church, City Attorney;
18 Sherrie Christensen, Senior Planner; Linda Horrocks, Deputy Recorder; Andrea Bradford,
19 Minutes Secretary.
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21 OTHERS PRESENT: James Hood, resident.
22

23 1. DEPARTMENT REPORT-COMMUNITY DEVELOPMENT
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25 Sherrie Christensen introduced herself to the Mayor and Council and said that she has been a city
26 planner for twenty years and has worked for Utah and Morgan counties and Syracuse city. She
27 then reported that this year there have been 86 building permits issued in Foxboro, 37 other
28 single-family homes, one multi-family dwelling and two new commercial buildings.
29

30 Council Member Mumford asked if there were any updates on Lee's Market. Ms. Christensen
31 replied that as far as she knew, they were working on property development plans. She gave an
32 update on other current projects including the Highway 89 Redevelopment Area (RDA) project
33 and the Town Center. Other projects include some proposed ordinance changes, the design and
34 application for State permits for the canoe takeout, hiring of a consultant for the Foxboro
35 Wetlands project, a comprehensive plan for park improvements and preservation, CDBG grant
36 documents for low-to-middle income housing, and the Foothill development code amendments.
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38 2. APPROVE MINUTES-SEPTEMBER 1, 2015
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40 The City Council minutes of September 1, 2015 were reviewed and approved.

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Council Member Jacobson moved to approve the work session and regular session minutes of September 1, 2015. Council Member Porter seconded the motion. The motion was approved by Council Members Horrocks, Jacobson, Porter, Jensen and Mumford.

3. ACTION ITEMS

The action items list was reviewed. Completed items were removed from the list.

Mayor Arave asked that City staff check the new retaining wall at Gary Way to make sure it aligns with the existing wall.

4. COUNCIL REPORTS

Council Member Mumford reported that the Planning Commission is preparing some ordinance changes pertaining to the area currently under the building moratorium.

Council Member Jensen reported that the Eaglewood family golf tournament was a great event with 15 families participating. He also said that the 23rd Army Band performed at the Second Sunday Concert held at the golf course, and that it was well attended. The NSL Reads event will be held October 1st with local author Dan Wells speaking as well as other activities.

Council Member Porter reported on the Uniting Neighbors meeting and said that the emergency preparedness manual will be reviewed and updated.

Council Member Horrocks reported that there were three human cases of West Nile virus in Salt Lake County and that mosquito eggs cannot hatch after September 15th as it is too cold. He also stated that he needs a certificate of training for the open meetings act for the auditor of the Davis County Mosquito Abatement District.

Council Member Jacobson reported that the Youth City Council will be cleaning the off-ramp on Tuesday and requested garbage bags and safety vests from City staff. He then said that the most recent Senior Lunch Bunch had a good turnout. He also asked if City staff could trim the trees and clean up branches at Hatch Park.

Council Member Mumford commented that the Planning Commission discussed starting their meetings with a prayer and the pledge. David Church clarified public policy on praying in public and said that no public funds could be expended, that it could not be discriminatory, etc.

80 Council Member Jensen also asked if one of the participants of the NSL Live committee could
81 be added as a voting member. Council Members will review their appointees to see who is at the
82 end of their terms and possible replacements.

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84 5. MAYOR'S REPORT

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86 Mayor Arave reported that he had enrolled in the Citizen's Police Academy and that it has been a
87 good experience. He also reported on the open house for the PCE water contamination in the
88 area and said that as Woods Cross is facing the same situation, it would be beneficial to work
89 together.

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91 6. CITY ATTORNEY'S REPORT

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93 David Church had nothing to report.

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95 7. CITY MANAGER'S REPORT

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97 Barry Edwards was excused.

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99 8. ADJOURN

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101 Mayor Arave adjourned the meeting at 6:55 p.m. to begin the regular session.

NORTH SALT LAKE CITY
CITY COUNCIL MEETING-REGULAR SESSION
SEPTEMBER 15, 2015

DRAFT

Mayor Arave called the meeting to order at 7:08 p.m. Council Member Ryan Mumford offered the invocation and Sammy Wang, BSA Troop 11036, led those present in the Pledge of Allegiance.

PRESENT: Mayor Len Arave
Council Member Brian Horrocks
Council Member Matt Jensen
Council Member Stan Porter
Council Member Conrad Jacobson
Council Member Ryan Mumford

STAFF PRESENT: Barry Edwards, City Manager; Chief Craig Black, Police Chief; Paul Ottoson, Public Works Director and City Engineer; Jon Rueckert, Assistant Public Works Director; Dane Stone, Deputy Fire Chief; David Church, City Attorney; Sherrie Christensen, Senior City Planner; Linda Horrocks, Deputy Recorder; Andrea Bradford, Minutes Secretary.

OTHERS PRESENT: Tracy Gunn, Judy Fehse, Connie Bond, Jamie Clark, Mikelle Lamoureux, Jonathan Lamoureux, Noelle Lamoureux, Dale Elton, David Chipman, Jamison Weston, Giorgio Weston, Clarence Montgomery, James Hood, residents; Katie Wang, Sammy Wang, BSA Troop 11036; Dane Stone, South Davis Metro Fire.

1. CITIZEN COMMENT

Lynn Preece, 441 North 75 East, commented that last April the City sent out flyers requesting to be notified of any sidewalk problems. He said that City staff reviewed the problem sidewalk near his home and dug it up. This has made it difficult for his neighbor who is in a wheelchair and he is concerned that the sidewalk is not fixed and that the tree roots cause large bumps in the sidewalks. He also said that there is an issue with cars parked for extended periods of time with no license plates.

Paul Ottoson replied that he had reviewed the area that afternoon and agreed that the sidewalks are terrible in that area. He said that the best way to fix them is to remove the trees and redo the sidewalks. There are approximately 30 areas in the subdivision where trees have uplifted the

141 sidewalk. He stated that while City staff could fix this area, it may set a precedent and other
142 residents may request that their sidewalks be fixed as well.

143
144 Sammy Wang, 491 Lynhurst Drive, commented that when the sand was removed from the
145 nearby neighborhood park and replaced with wood chips that the sidewalk was damaged and
146 asked if this could be fixed.

147
148 Mikelle Lamoureux, 463 Winchester Drive, reported that when the sand was replaced in the park
149 that there was damage done including a broken ramp with exposed metal, ruts in the grass,
150 cracked sidewalks and damage to the support footing and slide.

151
152 Mayor Arave commented that City staff will look at the damage to the park and also said that the
153 City is looking to put sandboxes in some of the City parks as the budget allows.

154
155 2. PUBLIC HEARING ON RESOLUTION 2015-23R PROPOSING THE CREATION OF
156 A LOCAL DISTRICT AND SERVICE AREA FOR THE PROVISION OF FIRE
157 PROTECTION, EMERGENCY MEDICAL RESPONSE, PARAMEDIC,
158 EMERGENCY RESPONSE SERVICES, AMBULANCE SERVICES AND RELATED
159 SERVICES TO THE CITIES OF BOUNTIFUL, CENTERVILLE, NORTH SALT
160 LAKE, WEST BOUNTIFUL, WOODS CROSS AND THE UNINCORPORATED
161 AREA OF SOUTH DAVIS COUNTY AND THE TRANSFER OF THE
162 RESPONSIBILITIES AND OPERATIONS OF THE EXISTING SOUTH DAVIS
163 METRO FIRE AGENCY TO THE PROPOSED DISTRICT

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165 Dane Stone, South Davis Metro Fire Agency, reported on the proposed taxing district and
166 possible concerns. South Davis Metro Fire Agency (SDMFA) is currently in an interlocal
167 agreement with limited ability to bond or obtain funding. This also limits the ability to refinance
168 the current bond to a lower rate and restricts the ability to bond for any other capital
169 improvements including repair to fire stations, etc.

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171 The participating cities' mayors would remain on the governing board, and the cities could lower
172 their taxes for the year until a truth in taxation hearing was held. This would also allow bonding
173 for capital improvements.

174
175 Mayor Arave clarified that currently the SDMFA is in an interlocal agreement with the five cities
176 in the county and that as an agency, they are unable to tax directly. The only way to raise funds
177 for capital projects is by passing the responsibility onto the cities. If a district is formed the
178 current bond could be refinanced to save money. He added that repairs to the fire stations have to
179 be funded whether through a district or directly through the cities.

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Mayor Arave opened the public hearing at 7:32 p.m.

Dale Elton, 602 Ridgewood-Bella Vita, commented that he learned about the proposed fire district in the newspaper and after doing research discovered that this is a good idea. He expressed concern that the current fire department is understaffed which would reduce response time. And, if staff is underpaid it may cause them to leave to work for other fire departments.

Clarence Montgomery, 310 Guinevere, commented that he is a retired police officer and said that it is a good idea for the surrounding cities to provide backup emergency services to each other. His only concern is that the budget for the City is high for emergency services and that this will create another taxing entity. He asked if this reduces property taxes to compensate for a new taxing entity. Mayor Arave replied that legally property taxes would be reduced.

Mayor Arave then read a statement regarding instructions for public hearings and said that protests must be filed within 60 days of the public hearing with a deadline of November 16, 2015. Protests must be in writing and filed with the city recorder. Protests must be filed by real estate property owners and registered voters residing within the city or unincorporated county.

David Chipman, 824 Oxford, commented that he had just moved into the City from an area with a similar fire district and that they were able to accomplish more after the district was formed due to a solid funding stream.

Mayor Arave closed the public hearing at 7:44 p.m.

3. CONSIDERATION OF A PROPOSED MEMORANDUM OF UNDERSTANDING BETWEEN THE STATE OF UTAH DEPARTMENT OF NATURAL RESOURCES DIVISION OF FORESTRY, FIRE AND STATE LANDS AND THE CITY OF NORTH SALT LAKE (CANOE TAKEOUT)

Sherrie Christensen reported that the proposed memorandum allows the City to be reimbursed for the purchase of land, located off Center Street, for the canoe takeout area. Once the memorandum is signed an invoice will be presented to the State for reimbursement in the amount of \$65,000. The next step will then be review of the concept plan followed by the submission of the permits for construction.

Council Member Porter moved to approve the Memorandum of Understanding between the State of Utah Department of Natural Resources Division of Forestry, Fire and State Lands and the City of North Salt Lake related to the development of a canoe take-out park

219 **along the Jordan River. Council Member Mumford seconded the motion. The motion was**
220 **approved by Council Members Horrocks, Jacobson, Porter, Jensen and Mumford.**

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222 4. CONSIDERATION OF PROPOSED ADDENDUM NO. THREE TO THE
223 CONDITIONAL USE PERMIT (CUP) AGREEMENT FOR FOXBORO AND
224 ADDENDUM NO. SIX TO THE CUP AGREEMENT FOR FOXBORO NORTH TO
225 ALLOW HOME OCCUPATIONS AS PERMITTED RATHER THAN CONDITIONAL
226 USES

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228 Sherrie Christensen reported that the development code calls for home occupations in the
229 Foxboro neighborhoods to be considered conditional uses per the conditional use permit (CUP)
230 agreements with Foxboro. This requires all home businesses to be processed by the Planning
231 Commission, regardless of the type of business, in the Foxboro area even though they are
232 permitted in other areas of the City. Staff has met with the developer of the property who does
233 not object to making this change.

234

235 **Council Member Jensen moved that the City Council approve Addendum No. Three to the**
236 **Conditional Use Permit Agreement for Foxboro and Addendum No. Six to the Conditional**
237 **Use Permit Agreement for Foxboro North. Council Member Mumford seconded the**
238 **motion. The motion was approved by Council Members Horrocks, Jacobson, Porter,**
239 **Jensen and Mumford.**

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241 5. CONSIDERATION OF RESOLUTION 2015-26R AMENDING THE PERSONNEL
242 POLICY AND PROCEDURES MANUAL RELATING TO SICK LEAVE

243

244 Barry Edwards reported that the City has lost several employees recently, so staff has looked at
245 different ways to retain staff and attract new employees. He explained that replacing and hiring
246 new employees is expensive due to recruitment, training and loss of productivity. He suggested
247 that a sick leave buyback program may incentivize employees to stay and increase productivity.
248 The proposal would be to increase the amount an employee can convert and reduce unfunded
249 liabilities.

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251 Council Member Jensen asked if this would increase the labor cost to the City. Barry Edwards
252 replied that it would be a 50% increase of what the City is currently paying on a 1/3 payout. He
253 explained that 11 employees would qualify at 100%, 17 would qualify at 66%, 13% would
254 qualify for 33% and 22 would not qualify under the current or proposed plan.

255

256 Council Member Horrocks recused himself of the issue as he has a conflict of interest.

257

258 Chief Black stated that this program would allow employees some control over their income.
259 Employees would most likely take sick days only when they were actually sick. He said this may
260 not solve all the problems but that it would help especially in short-staffed departments who
261 really feel the strain when an employee calls in sick. He agreed that employee retention should
262 be addressed.

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264 Paul Ottoson said that the employees in the Public Works department are not well paid and that
265 this would be a way to help them.

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267 Council Member Mumford commented that the City should consider just paying a wage increase
268 to entry level employees instead of benefiting senior level employees as well.

269
270 Council Member Jensen commented that this program would incentivize employees to come to
271 work but may not keep them from leaving for other cities. He said the bulk of the buy-back
272 incentive would only be available to the highest paid employees.

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274 Barry Edwards replied that the employees with the highest amount of sick leave are not just
275 department heads. He said that this would benefit all eligible employees.

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277 **Council Member Porter moved to adopt Resolution 2015-26R as it has been presented.**
278 **Council Member Jacobson seconded the motion. The motion was approved by Council**
279 **Members Jacobson, Porter and Jensen. Council Member Mumford voted in opposition to**
280 **the motion. Council Member Horrocks abstained from voting.**

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282 6. ADJOURN INTO CLOSED SESSION TO DISCUSS THE CHARACTER,
283 PROFESSIONAL COMPETENCE OR PHYSICAL OR MENTAL HEALTH OF AN
284 INDIVIDUAL

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286 **At 8:22 p.m. Council Member Jacobson moved to go into closed session to discuss the**
287 **character, professional competence or physical or mental health of an individual. Council**
288 **Member Horrocks seconded the motion. The motion was approved by Council Members**
289 **Horrocks, Porter, Mumford, Jacobson and Jensen.**

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291 7. CLOSED SESSION TO DISCUSS THE CHARACTER, PROFESSIONAL
292 COMPETENCE OR PHYSICAL OR MENTAL HEALTH OF AN INDIVIDUAL

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294 **At 8:22 p.m. Council Member Porter moved to go out of closed session. Council Member**
295 **Jensen seconded the motion. The motion was approved by Council Members Horrocks,**
296 **Porter, Mumford, Jacobson and Jensen.**

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298 8. ADJOURN

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300 Mayor Arave adjourned the meeting at 9:15 p.m.

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Mayor

Secretary

Action Items (for October 6, 2015)

| Item | Chair | Committee | Description |
|-------------------|--------|-----------|--|
| <u>NEW</u> | | | |
| 1 | Paul | | Mayor or staff to follow up with Lynn Preece who lives at 441 N 75 East and is concerned about tree roots/torn up sidewalk near his home. <i>Staff checked reviewed other cities' policies and will put together a recommendation for council. Contractor also surveying the area for similar problems.</i> |
| 2 | Paul | | Paul Ottoson to check retaining wall at the end of Gary Way (east side of circle). <i>City inspector reviewed the wall, and it conforms to City Code.</i> |
| 3 | Jon | | Garbage bags and vests to be provided to Youth City Council for off-ramp cleanup on Tuesday 9/22 before 5pm (Jon Rueckert) <i>Done.</i> |
| 4 | Jon | | Cleanup tree branches that have fallen at south end of Hatch Park <i>Done.</i> |
| 5 | Paul | | City staff to review damage at park on Lynhurst and Winchester. Damage when sand was removed. Also would like a sandbox put back in. <i>Staff has fixed damage.</i> |
| 6 | CC | | Councilmembers to review NSL Live appointments and suggest possible changes before the end of the year. |
| <u>OLD</u> | | | |
| 1 | Jeff | | Chief Bassett - provide breakdown of YTD percentages in the graph he presented for exact number of calls for each category (i.e. calls for fire, falls, CO, etc.) <i>Information will be sent to council</i> |
| 2 | Paul | Jon | The street light on 263 East Center Street, in front of the church, needs to be fixed. <i>Jon has contacted the power company.</i> |
| 3 | Jon | | Council Member Porter reported on vandalism to the Wild Rose Trail including spray paint and a couch left on the trail. <i>Done.</i> |
| 6 | Jon | | Signs to be installed on Wildrose Trail – <i>Signs arrived; staff working with Eagle Scout to install.</i> |
| 7 | Janice | | Fleet Fund 10-year replacement vehicle schedule to be presented to the City Council. <i>Gathering info from dept. heads – will present second meeting in Nov.</i> |
| 9 | Paul | Jon | Issues from resident Pamela Parkin - Removal of Salt Lake Gun Club sign and Address safety of 4-way stop Center and Main. <i>Ken's staff is looking at Gun Club sign. PW reviewed and stop signs are being hit by trucks on a regular basis. Existing stop signs are already oversized. Staff does not recommend upgrading to more expensive signs or lights.</i> |
| 10 | Ken | | Review current ordinances regarding landscaping. Look at possibly including landscaping restrictions or incentives for xeriscaping. Also look at holding developers responsible for poor landscaping. <i>Ken to put report together for Council review.</i> |
| 11 | Paul | Jon | Survey property near Wild Rose Trail behind Country Court to establish property lines to resolve encroachment issues. <i>Get appraisal on Reynolds property – make recommendations to council (include 40-ft setback from trail). Meeting with Mr. Reynolds.</i> |
| 12 | Ken | | Mayor Arave requested staff & Planning Commission review ordinances/code for the landslide/hillside regarding development and to let the Citizens Landslide Committee know when the PC would be meeting to discuss the code. Mayor Arave asked if the City could require developers to have landslide/earth movement insurance. David to put together language for a subdivision ordinance to require insurance. (Jeff Brimhall's suggestions). Also, amend Sensitive Lands Map to include the landslide area and review Draper's ordinances. <i>NSL moratorium ordinance passed 5-5-15. David & Ken working on additional items. Draft of hillside ordinance is complete – will take to DRC and PC.</i> |
| 13 | Paul | | Staff walk hills in areas of the Views at Eaglewood Village- look for water-loving plants. Mayor also wants staff to check the soils reports again. <i>Public Works to put map and inspection schedule together.(Paul talk to Danny)</i> |
| 14 | Ken | | Look for possible sponsors for July 3 rd fireworks celebration. Consideration of donations/naming rights and advertising. <i>Ken is looking into this for 2016.</i> |

RESOLUTION NO. 2015-25R

**A RESOLUTION REQUESTING THE RECERTIFICATION OF THE
CITY OF NORTH SALT LAKE JUSTICE COURT**

WHEREAS, the provisions of U.C.A 78A-7-103 require that Justice Courts be recertified at the end of each four-year term; and

WHEREAS, the term of the present Court shall expire in February 2016; and

WHEREAS, the members of the City Council have received an opinion letter from David Church, City Attorney, which sets forth the requirements for the operation of a Justice Court and feasibility of continuing to maintain the same; and

WHEREAS, the members of the City Council have determined that it is to the best interests of the City of North Salt Lake to continue to provide for a Justice Court;

BE IT RESOLVED, the City Council hereby requests recertification of the North Salt Lake City Justice Court by the Justice Courts Standards Committee and the Utah Judicial Council.

BE IT FURTHER RESOLVED that the City Council of the City of North Salt Lake hereby affirm their willingness to continue to meet all requirements set forth by the Judicial Council for continued operation of the North Salt Lake Justice Court for the next four-year term of court, except as to any requirements waived by the Utah Judicial Council.

APPROVED and signed this _____ day of _____, 2015.

CITY OF NORTH SALT LAKE

By _____
Leonard K. Arave, Mayor

ATTEST:

By _____
Barry Edwards, City Recorder

COURT CERTIFICATION AFFIDAVIT

Court Location: City of North Salt Lake

Judge: David L Miller

Address: 10 E. Center St

North Salt Lake, UT 84054

Telephone: 801 335 8640

Level of Court (Circle one): I **II** III IV

Average Case Filings Per Month: 247

Daily Court Hours: 8:00 AM - 5:00 PM M-F

Number of Full-time Clerks: 1
Hours Worked Per Week Per Clerk: 40

Number of Part-time Clerks: 2
Hours Worked Per Week Per Clerk: 20

This form is divided into two parts. Section I contains those requirements that are statutory and are **not** waivable. Section II contains minimum requirements established by the Judicial Council, and those requirements may be waived pursuant to the procedure set forth in the instructions to applicant included with the application for certification.

Comes now Judge David L. Miller

Justice Court Judge for North Salt Lake

_____ and,

except as specifically noted below, certifies as follows:

SECTION I

**THE FOLLOWING ITEMS ARE STATUTORY AND CANNOT BE WAIVED.
CERTIFICATION WILL NOT BE GRANTED UNLESS EACH REQUIREMENT IS MET.**

Please indicate **Yes or No** to each of the following:

1. All official court business is conducted in a public facility. Y
2. Court is open daily. Y
3. The hours of court operation are posted conspicuously. Y
4. The judge and the clerk attend court at regularly scheduled times based on the level of the court. Y
5. The judge is compensated at a fixed rate, within the statutory range. Y
6. The responsible governmental entity provides and compensates sufficient clerical personnel necessary to conduct the business of the court. Y
7. The responsible governmental entity assumes the expenses of the travel of the judge for purposes of required judicial education. Y
8. The responsible governmental entity assumes the expenses of the travel of each clerk for the purposes of attending training sessions conducted by the Judicial Council. Y
9. The responsible governmental entity provides the Court with:
 - a. Sufficient prosecutorial support Y
 - b. Funding for attorneys for indigent defendants, as appropriate Y
 - c. Sufficient local law enforcement officers to attend court as provided by statute Y
 - d. Security for the court as provided by statute Y
 - e. Witness and juror fees Y
 - f. Appropriate copies of the Utah Code, the Justice Court Manual, state laws affecting local governments, local ordinances and other necessary legal reference materials Y

10. Fines, surcharges and assessments which are payable to the state are forwarded as required by law.
11. Court is held within the jurisdiction of the court, except as provided by law (78A-7-212).
12. All required reports and audits are filed as required by law or Rule of the Judicial Council.

SECTION II

Section II contains minimum requirements established by the Judicial Council, and those requirements may be waived or an extension granted pursuant to the procedure set forth in the instructions to applicant included with this application for recertification.

Please indicate YES or NO to each of the following:

1. Court is open each day as appropriate for the classification of the court. Y
2. The judge is available to attend court and to conduct court business as needed. Y
3. Minimum furnishings in the courtroom include:
 - a. Desk and chair for the judge Y
 - b. A six inch riser Y
 - c. Desk and chair for the court clerk Y
 - d. Chairs for witnesses Y
 - e. Separate tables and appropriate chairs for plaintiffs and defendants Y
 - f. A Utah State flag Y
 - g. A United States flag Y
 - h. A separate area and chairs for at least four jurors Y
 - i. A separate area with appropriate seating for the public Y
 - j. An appropriate room for jury deliberations Y
 - k. An appropriate area or room for victims and witnesses which is separate from the public Y
 - l. A judicial robe Y
 - m. A gavel Y
 - n. Current bail schedules Y
 - o. A copy of the Code of Judicial Administration Y

- p. Necessary forms and supplies Y
 - q. Office space for the judge Y
 - r. Office space for the court clerk Y
 - s. Secure filing cabinets Y
 - t. Appropriate office supplies Y
 - u. A cash register or secured cash box Y
 - v. At least one computer with internet access Y
 - w. Access to a copy machine Y
4. The appropriate number of clerks as required by the classification of the court are present during the time court is open each day and as needed during court sessions. Y
5. Does the applicant have a law enforcement department? Y
6. If the applicant does not have a law enforcement department, identify the law enforcement agency which will provide law enforcement services for the applicant: N/A
-
7. A security plan has been filed consistent with C.J.A. Rule 3-414. Y
8. The court electronically reports to the Driver License Division, the Bureau of Criminal Identification and the Administrative Office of the Courts as required. Y
9. If the court is a **Class I** court: N/A
- a. Judge is employed on a full-time basis _____
 - b. Dedicated courtroom which meets the master plan guidelines adopted by the Judicial Council _____
 - c. Court has a jury deliberation room _____
 - d. Judge's chambers, clerk's office, and courtroom are in the same building _____
 - e. Judge has his or her own private chambers _____
 - f. Clerk's office is separate from any other entity _____

g. Court is open during normal business hours _____

10. If the court is a **Class II** court:

a. Court is open (check one)

1. 201-300 average monthly filings: at least 4 hrs./day
 2. 301-400 average monthly filings: at least 5 hrs./day
 3. 401-500 average monthly filings: at least 6 hrs./day

b. Trial calendar is set at least weekly Y

c. Courtroom configuration is permanent Y

d. Courtroom, judge's chambers, and clerk's office are within the same building Y

e. Judge has his or her own private chambers Y

11. If the court is a **Class III** court:

a. Trial calendar is set at least every other week _____

b. Court is opened (check one): N/A

1. 61-150 average monthly filings: at least 2 hrs./day
 2. 151-200 average monthly filings: at least 3 hrs./day

12. If the court is a **Class IV** court: N/A

a. Trial calendar is set at least monthly _____

b. Court is open at least 1 hour per day _____

13. **If you have responded with a "no" to any item in Section II above, you must request a waiver or extension below and justify that request.** If waiver or extension of any requirement is requested, please specify each requirement and indicate factors which demonstrate a need for the waiver or extension. For any requested extension, please include the requested extension period. (To receive a waiver or extension of any requirement, the information requested in this section must be provided. Remember that statutory requirements cannot be waived or extended).

N/A

I am familiar with the minimum operational standards for this court, and except as noted above, those standards are currently met or exceeded. During the current term of the court, I have met with the appropriate governing body of the City to review the budget of the court, review compliance with the minimum requirements and operational standards, and discuss other items of common concern.

DATED this 7 day of September, 20 15.


Justice Court Judge

I declare under criminal penalty of the State of Utah that the foregoing is true and correct.

Executed on this 7th day of Sept, 20 2015.

BLAISDELL, CHURCH, & Johnson L.L.C.
ATTORNEYS AT LAW

5995 SOUTH REDWOOD ROAD
SALT LAKE CITY, UTAH 84123
Email: bclaw@xmission.com

TEL (801) 261-3407
FAX (801) 261-3503

DAVID L. CHURCH

October 1, 2015

Mayor Len Arave
North Salt Lake City
10 East Center Street
North Salt Lake City, UT 84054

Dear Mayor and Council:

As part of the certification process for your Justice Court I have been asked to render an opinion as to the requirements for your court and the feasibility of your maintaining the court. In rendering this opinion I have reviewed the operation of your Court during the past, spoken with the Court Clerk and other staff concerning the operation of the Court and its case load and have reviewed the requirements of both statute and rule for the operation of the Court.

Statutes of the State of Utah require the following standards be met in the operation of a Justice Court:

1. All official court business shall be conducted in a courtroom or an office located in a public facility which is conducive and appropriate to the administration of justice (Utah code 78A-7-213).
2. Each court shall be opened and judicial business shall be transacted every day as provided by law (Utah Code 78A-75-213), although the judge is not required to be present during all hours that the court is open.
3. The hours that the court will be open shall be posted conspicuously at the court and in the local public buildings (Utah Code 78A-75-213).
4. The judge and the clerk of the court shall attend the court at regularly scheduled times (Utah Code 78A-75-213).

5. The City, as the entity which created the Justice Court must provide and compensate a judge and clerical personnel to conduct the business of the court (Utah Code 78A-7-207 and 78A-7-211).
6. The City must assume the expenses of travel, means, and lodging for the judge of that court to attend required judicial education and training (Utah Code 78A-7-205).
7. The City must assume the cost of travel and training expenses of clerical personnel at training sessions conducted by the Judicial Council (Utah Code 78A-7-103).
8. The City must provide a sufficient staff of public prosecutors to attend the court and perform the duties of prosecution (Utah Code 78A-7-103).
9. The City must provide adequate funding for attorneys where persons are indigent as provided by law (Utah Code 78A-7-103).
10. The City must provide sufficient local law enforcement officers to attend court when required and provide security for the court (Utah Code 78A-7-103).
11. Witnesses and jury fees as required by law shall be paid by the City. (Utah Code 10-7-76)
12. Any fine, surcharge, or assessment which is payable to the State shall be forwarded to the State as required by law (Utah Code 78A-7-120 and 78A-7-121).
13. The City must pay the judge of that court a fixed compensation within the range provided for by statute. (Utah Code 78A-7-206).
14. Court shall be held within the jurisdiction of the court, except as provided by law. (Utah Code 78A-7-212).
15. The City must provide and keep current for the court a copy of the of the Utah Code, the Justice Court Manual, state laws affecting local governments, Utah Court Rules Annotated, local ordinances, and other necessary legal reference material (Utah Code 78A-7-103).
16. All required reports and audits shall be filed as required by law or by rule of the Judicial Council pursuant to Utah Code Section 78A-7-215.
17. All Justice Courts must use a common case management system and disposition reporting system as specified by the Judicial Council. (Utah Code 78A-7-213)
18. All Justice Courts must record all proceedings with a digital audio recording device and maintain the audio recordings for one year. (Utah Code 78A-7-103)

In addition to those requirements which are directly imposed by statute, Utah Code Section 78a-7-103 directs the Judicial Council to promulgate minimum requirements for the creation and certification of Justice Courts. Pursuant to statute, the Judicial Council has adopted the following minimum requirements:

1. That the Court be opened for at least one hour each day that the court is required to be open as provided by law.

2. That the judge be available to attend court and conduct court business as needed.

3. That the minimum furnishings for a courtroom include: a desk and chair for the judge (on a six inch riser), a desk and chair for the court clerk, chairs for witnesses, separate tables and appropriate chairs for plaintiffs and defendants, a Utah State flag, a United States flag, a separate area and chairs for a least four jurors, a separate area with appropriate seating for the public, an appropriate room for jury deliberations, and an appropriate area or room for victims and witnesses which is separate from the public.

4. A judicial robe, a gavel, current bail schedules, a copy of the Code of Judicial Administration, and necessary forms and supplies.

5. Office space for the judge and clerk (under certain circumstances this space may be shared, but if shared, the judge and clerk must have priority to use the spaces whenever needed). The office space shall include a desk for the judge and a desk for the clerk, secure filing cabinets for the judge and the clerk, a telephone for the judge and a telephone for the clerk, appropriate office supplies to conduct court business, a cash register or secured cash box, a typewriter or word processor, and access to a copy machine.

6. A clerk must be present during the time the court is open each day and during court sessions, as required by the judge.

7. The entity must have at least one peace officer (which may be contracted).

8. A court security plan must be submitted consistent with C.J.A. Rule 3-414.

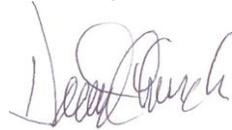
9. Each Court must have at least one computer with access to the internet, and appropriate software and security/encryption technology to allow for electronic reporting and access to Driver License Division and the Bureau of Criminal Identification, as defined by the reporting and retrieval standards promulgated by the Department of Public Safety. Monthly reports must also be electronically submitted to the Administrative Office of the Courts monthly. A justice courts must use the CORIS case management system. (Utah Code 78A-7-213)

10. Each Court shall report required case disposition information to DLD, BCI and the Administrative Office of the Courts electronically, as described in number 9 above.

In addition to these base requirements there are additional requirements depending on the average number of cases filed in the Court per month. I am informed that you have more than 201 cases a month but less 500 per month (approximately 250 per month). It appears to me that your Court is a class II Court. The requirements a Class II Court must be open at least 4 hours per day and a trial calendar must be held at least weekly. In addition the Judge must be available when needed and you need to have at least one and one half full time equivalent clerical employees.

I have reviewed your past operation of the Court and believe that it has been in compliance with State Law. It is my also my opinion that it is feasible for you to continue to maintain the Court in compliance with applicable law.

Sincerely,

A handwritten signature in cursive script, appearing to read "David Church".

David Church
Attorney at Law

RESOLUTION NO. 2015-27R

A RESOLUTION PROVIDING SUPPORT FOR A SPECIAL BOND ELECTION TO BE HELD ON NOVEMBER 3, 2015, FOR THE ISSUANCE OF \$298,000,000 GENERAL OBLIGATION BONDS TO FINANCE THE COSTS OF CONSTRUCTING AND FURNISHING PUBLIC SCHOOLS, ACQUIRING LAND, AND OTHER SCHOOL RELATED PROJECTS (THE "PROJECT").

WHEREAS, the Davis School District (the "District") needs to construct public schools, acquire land, and other school related capital projects (the "Project") and does not have on hand money to pay for all of the costs of the Project and has determined to defray the cost thereof through the issuance of up to \$298,000,000 of its General Obligation Bonds (the "Bonds"); and

WHEREAS, the District desires to submit a proposition concerning the issuance of the Bonds to the vote of the qualified electors of the District pursuant to the provisions of the Local Government Bonding Act, Title 11, Chapter 14, Utah Code Annotated 1953, as amended, and applicable provisions of the Utah Election Code, Title 20A, Utah Code Annotated 1953, as amended (collectively, the "Act");

WHEREAS, the City Council (the "Council") of the City of North Salt Lake, Utah (the "City") desires to provide support to (i) the Board of Education of the Davis School District (the "Board") in its endeavor to provide a quality educational environment for the students of the District, and (ii) the bond initiative asking voters to authorize up to \$298,000,000 General Obligation bonds for the Project;

NOW, THEREFORE, It is hereby resolved by the City Council of the City of North Salt Lake as follows:

1. Support. The Council supports the \$298,000,000 bond initiative proposed by the Board and for the sake of the students within the District.

PASSED AND APPROVED this October ____, 2015.

CITY OF NORTH SALT LAKE:

Leonard K. Arave, Mayor

ATTEST:

City Council Vote as Recorded:

Name

Vote

City Recorder

Council Member Horrocks _____

Council Member Jacobson _____

Council Member Jensen _____

Council Member Mumford _____

Council Member Porter _____



NORTH SALT LAKE COMMUNITY AND ECONOMIC DEVELOPMENT

10 East Center Street
North Salt Lake, Utah 84054
(801) 335-8700
(801) 335-8719 Fax

MEMORANDUM

TO: Honorable Mayor and City Council

FROM: Ken Leetham, Assistant City Manager

DATE: October 6, 2015

SUBJECT: Consideration of proposed amendments to the Interlocal Cooperation Agreement between the City of North Salt Lake and the Jordan River Commission

RECOMMENDATION

City staff recommends approval of proposed amendments to the Interlocal Cooperation Agreement between the City of North Salt Lake and the Jordan River Commission.

BACKGROUND

As you know, the Jordan River Commission is an agency formed by interlocal cooperation agreements between many local governments that are affected by the Jordan River and its tributaries. The agency is approximately five (5) years old and we are one of the local government members. There are also private partners that are Ex-Oficio members of the Commission and make up one-third of the membership of the Board.

Since the formation of the Commission and its successful operation for the past several years, the Board has a desire to now make some changes to the Interlocal Cooperation Agreement in order to reflect more accurately how the Commission and the Board function. The following list is a summary of the changes made to the Agreement:

- ◆ Tense changes have been made throughout that reflect that the agreement was previously approved.
- ◆ Par. 5.4: The membership of the Board is clarified to mean that for every two (2) governmental members, one (1) Ex-Oficio member position will be added.
- ◆ Pars: 8.3 & 8.4: Review powers of the Commission can only be initiated at the request of an affected member (such as a city or county) or an affected private party.

- ◆ Pars. 10.4 & 11.1.1: Adds a Past Chair position to the Board and Executive Committee and establishes that the terms shall be set forth in the By Laws of the Commission.
- ◆ Par. 11.4: Amended to require the adoption of By Laws – this was formerly not a requirement, but an elective choice.
- ◆ Par. 11.7: Amended to require the adoption of policies and procedures, as required by the State or needed by the Board.
- ◆ Par. 12.1.3: Clarifies that the Executive Committee will contain a representative from the Division of Water Quality.
- ◆ Par. 13.4: Allows the Board to submit something less than a certified annual audit to the State of Utah, so long as the submittal is in compliance with State law for an agency the size of the Commission.

As stated previously, these changes reflect the current practices of the Commission and it was felt by the Board that these practices are important enough that they should be set forth in all of the members' agreements.

POSSIBLE MOTION

I move that the City Council approve the proposed amendments to the Interlocal Cooperation Agreement between the City of North Salt Lake and the Jordan River Commission.

Attachments

- 1) Proposed interlocal agreement with changes identified (strike-thru and underline format)

INTERLOCAL COOPERATION AGREEMENT

**MODIFYING THE 2010 INTERLOCAL COOPERATION AGREEMENT
THAT ESTABLISHED THE**

JORDAN RIVER COMMISSION

~~INTERLOCAL COOPERATION AGREEMENT~~

~~ESTABLISHING THE~~

~~JORDAN RIVER COMMISSION~~

THIS INTERLOCAL COOPERATION AGREEMENT (hereinafter "Agreement") is made and entered into as of the _____ day of _____, ~~2010~~2015, by and between the signatories to this Agreement. The signatories to this Agreement are "public agencies" as defined in the Utah Interlocal Cooperation Act, and are hereinafter referred to collectively as "Members" or "Parties" and individually as "Member" or "Party."

W I T N E S S E T H:

WHEREAS, pursuant to the provisions of the Utah Interlocal Cooperation Act (the "Interlocal Cooperation Act"), Title 11, Chapter 13, Utah Code Annotated (the "Utah Code"), public agencies are authorized to enter into mutually advantageous agreements for joint or cooperative action; and

WHEREAS, the Parties to this Agreement believe the Jordan River is one of Utah's great natural treasures and that cooperative action through the creation of a Jordan River Commission (the "Commission") would promote protection of the river in keeping with the Public Trust Doctrine, facilitate orderly planning and development in lands and waters adjacent to the river or impacting the quality of waters flowing into the river while protecting an individual jurisdiction's ability to govern its own area, and assist in the formulation and implementation of comprehensive plans for the management, protection and preservation of the river; and

WHEREAS, the Parties to this Agreement have respectively received appropriate authority to participate, as described herein, in a new Utah interlocal entity to be known as the Jordan River Commission; and

WHEREAS, Envision Utah, after extensive public hearings and public involvement, has

developed a document titled “*Blueprint Jordan River*” which sets forth guiding principles and goals developed through a public process for protecting the Jordan River and developing it as a community resource for the citizens of the counties and cities through which it passes; and

WHEREAS, the Commission ~~will be~~ responsible for developing broad-based support for Blueprint Jordan River and fostering the involvement of federal, state and local officials, representatives of private and non-governmental organizations, and the public in the implementation of the Blueprint; and

WHEREAS, the Commission can identify “best practices” with respect to management of the river ecosystem and can use that work to assist the Parties and private entities with professional and technical expertise and coordinate the exchange of information and expertise between the parties; and

WHEREAS, the Commission ~~will be~~ an effective and shared entity for on-going planning for the Jordan River that will have political, legal and financial viability; and

WHEREAS, by focusing on the river in its entirety, the Commission ~~will coordinate~~ with the cities and the counties in arriving at a comprehensive vision and Jordan River Blueprint for the entire river; and

WHEREAS, the Commission can identify and help solve issues relating to streams and creeks feeding into the Jordan River thus increasing the water quality of the overall system; and

WHEREAS, the Commission, through the broad participation of the Parties and the community can enjoy increased capability to secure governmental, foundation and other financial support for activities improving the river; ~~and-~~

WHEREAS, the parties believe that amendments to the Original Interlocal Agreement creating the Commission (the “Original Agreement”) will facilitate the effective operation of the Commission, reflect changes in state law and improve the governance of the Commission

NOW, THEREFORE, in consideration of the mutual covenants and agreements of the parties contained herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties hereto agree to amend the Original Agreement as follows:

ARTICLE 1

Definitions

As used herein, the following terms and words shall have the following meanings:

1.1 “Board” or “Governing Board” means the governing body of the ~~Jordan River~~ Commission.

1.2 “Bonding” means the issuance of “Bonds” and “Bonds” means bonds, notes, certificates of participation or other evidences of indebtedness of the ~~Jordan River~~ Commission, except as provided herein.

1.3 “Commission” means the Jordan River Commission, the new legal entity created by this Interlocal Cooperation Agreement.

1.4 “Effective Date” means the date the Parties to this Interlocal Cooperation Agreement intend for this Agreement to become effective, and is the date first written above.

1.5 “Governing Body” means the board, commission, council or executive body of a Member to whom a particular decision or governmental action is entrusted by law. For purposes of the financial decisions contemplated by Paragraphs 5.6 and 9.3 of this agreement, “Governing Body” in a city or county shall mean the city’s or county’s legislative body.

1.6 “Jordan River Blueprint” means a set of guiding principles and standards formally adopted by the Governing Board of the Commission as the principles and standards guiding improvement, use and development of the Jordan River and the lands and wetlands adjoining the river under the jurisdiction of the various local and state governmental entities and may include recommendations to Members and others on how best to set standards for improvement, use and development in the Jordan River Blueprint Study Area. It is the intent of the Parties that the Blueprint Jordan River prepared by Envision Utah and the guiding principles set out therein shall serve as the initial Jordan River Blueprint for the Commission.

1.7 “Members” or “Parties” means the participating counties, municipalities, limited purpose local government entities, and the State of Utah as represented by its participating departments.

1.8 “Ex Officio Members” means entities, associations, or organizations appointed in accordance with Section 5.4.

1.9 “Operation and Maintenance Expenses” means all expenses reasonably incurred by the ~~Jordan River~~ Commission or paid to any other entity pursuant to contract or otherwise, necessary to fulfill the purposes of this Agreement, including cost of audits hereinafter required,

payment of insurance premiums, and, generally all expenses, exclusive of depreciation and other non-cash items which under generally accepted accounting practices are properly allocable to operation and maintenance; however, only such expenses as are ordinary and necessary to the proper and efficient operation of the ~~Jordan River~~ Commission shall be included.

1.10 “Technical Advisory Committee” or “Technical Committee” means the technical advisory committee formed pursuant to Article 12 to advise the Governing Board on water quality, environmental, development, engineering, recreation, wildlife, and other technical and relevant issues associated with the Jordan River.

1.11 “Jordan River Blueprint Study Area” means the Jordan River and all lands and wetlands within one-half mile of the river as identified in the Blueprint Jordan River as it currently exists or as it may be amended from time to time.

ARTICLE 2

Purposes

~~This The Original~~ Agreement to create the ~~Jordan River~~ Commission as a separate legal entity, as provided by the Interlocal Cooperation Act, ~~is was~~ entered into and continues in existence by the Members in order to perform the following activities and such others as are authorized by law and approved by the members:

2.1 Encourage and Promote Multiple Uses of the River.

The Commission shall balance access, use, development, ecological value, preservation, restoration and economic benefits in accordance with applicable laws, rules and regulations, and consistent with the fact that the ownership of the river and its adjacent lands and areas are owned or governed by various public and private entities.

2.2 Foster Communication and Coordination.

The Commission shall coordinate communication among agencies and organizations regarding all aspects of land use, water use, water rights, river and river ecosystem protection, recreation, public facilities, and natural resource planning and management that affect the Jordan River and cooperate with state, federal, local governments, as well as private landowners and organizations to implement the purposes and goals of the Commission as adopted in the Jordan River Blueprint as determined by the Board and the “best management practices” developed by its Technical Advisory Committee. The Commission shall coordinate with agencies and entities having jurisdiction over the tributaries of the Jordan River so that the overall health and well

being of the River is considered in the activities of those agencies and entities.

2.3 Promote Resource Utilization and Protection.

The Commission shall promote the conservation, restoration and protection of the river's natural resources, including fish and wildlife, riparian habitat, water, water quality, environmental concerns, and open space.

2.4 Maintain and Develop Recreation Access.

The Commission shall encourage the enhancement of public access to recreational opportunities on and around the river in accordance with the purposes of the Commission and the guiding principles outlined in the Jordan River Blueprint and education and outreach efforts in furtherance thereof.

2.5 Monitor and Promote Responsible Economic Development.

The Commission shall monitor and promote responsible economic activity along the river and in areas affecting the river to promote efficient and orderly development that harmonizes with the aforementioned purposes of the Commission and is in accordance generally with the principles outlined by the Jordan River Blueprint.

2.6 Identify and Secure Funding for the Acquisition of Critical Habitat and Open Space.

The Commission will actively seek public and private funding to be used to acquire critical habitat and open space and to restore vital functioning of the riparian corridor. To that end it may partner with public entities, foundations and other private sources to secure and protect necessary river resources. The Commission shall be authorized to spend Commission and other private and public funding for projects directly benefitting the River regardless of whether those projects are in the Jordan River Study Area.

2.7 Engage in ongoing planning for the Identified Jordan River Blueprint Study Area.

The Commission will engage in a continuing planning process that involves the Members, the Ex Officio Members, other governmental entities and the community to guide development of the river and public and private facilities within the Jordan River Blueprint Study Area.

ARTICLE 3

Term of the Interlocal Cooperation Agreement

The term of this Interlocal Cooperation Agreement shall continue for fifty (50) years from the Effective Date of this Agreement unless this Agreement is sooner terminated by vote of seventy-five percent (75%) of the Members of the ~~Jordan River~~ Commission or by operation of law.

ARTICLE 4 Creation of the Jordan River Commission

4.1 Independent Legal Entity; Scope.

The ~~Jordan River~~ Commission ~~shall become~~ became a separate and independent governmental entity on the Effective Date of the Original Agreement pursuant to the provisions of ~~this-that~~ Agreement and shall continue its operation and existence pursuant to the provisions of ~~this-that~~ Agreement. The area included for Commission study and action ~~shall include~~s the Jordan River Blueprint Study Area as defined in Article 1.

4.2 Headquarters.

The ~~Jordan River~~ Commission's headquarters shall be located in a Member's geographical boundaries as determined by the Governing Board. The Governing Board may change the location from time to time. The Commission will have a budget as funded by the Board which allows it to hire necessary staff, purchase services from participating governmental entities, and retain the services of necessary legal counsel and consultants in accordance with an annual budget approval by the Board.

ARTICLE 5 Parties to this Agreement

5.1 Initial Membership.

Each signatory to this Agreement hereby contracts with the other signatories of this Agreement to form, and become a Member of, the ~~Jordan River~~ Commission to accomplish the purposes set forth in Article 2 herein.

5.2 Withdrawal.

Each party to this Agreement acknowledges and agrees that the withdrawal of any

Member from this Agreement pursuant to Section 5.6 shall not adversely affect this Agreement nor such party's contractual relationship with any other Party to this Agreement. Withdrawal of a Member does not relieve the Member's obligation to pay its annual dues for current year or its share of obligations, indebtedness, and liabilities incurred prior to withdrawal in accordance with Section 9.3.

5.3 Member Representation on Governing Board.

Membership of the Governing Board shall be made up of the signatories to this Agreement and as noted in Appendix 1 of this Agreement and such Ex Officio members as are admitted pursuant to Section 5.4. These Members shall have voting rights as noted in this Agreement. Counties that have established Municipal Type Services Districts pursuant to UCA 17-34-1 et seq. shall be entitled to two seats on the Governing Board to ensure adequate representation on issues related to unincorporated area land use regulation and county-wide recreational responsibilities.

5.4 Ex Officio Members of the Board.

By a majority vote of the Governing Board, Ex-Officio ~~m~~Members may be appointed or removed from the Board as Ex Officio members. Ex Officio ~~m~~Members shall be selected from other interested parties including recreation organizations; water user organizations; and other public or non governmental organizations. Interested parties may petition the Governing Board to become Ex Officio Members. Ex Officio ~~m~~Members shall be voting members who serve terms of two years and shall pay dues in accordance with Sections 13.1 and 13.3. Ex Officio ~~m~~Membership shall continue for subsequent terms unless terminated by a majority vote of the Governing Board. After the Commission is established and the Governing Board has voted, those appointed to serve as Ex Officio ~~m~~Members of the Board shall be listed in Appendix 1 to this agreement, which Appendix shall be modified as the Governing Board adds to or deletes those who will serve. For every two governmental Members of the Commission, one Ex Officio Member position will be added to the Governing Board. ~~Ex Officio members shall comprise one-third (1/3) of the total members of the Commission.~~ The actual number of Ex Officio ~~m~~Members shall vary from time to time as regular Members join or withdraw from participation in the Commission. An Ex Officio ~~m~~Member may be removed prior to the expiration of the Ex Officio ~~m~~Member's term if a reduction in the total number of Ex Officio ~~m~~Members is required by the withdrawal of a Member. Selection of the Ex Officio ~~m~~Member to be removed shall be by a majority vote of the Governing Board.

5.5 Subsequent Membership.

Public agencies who do not initially approve and become signatories to this Agreement,

have withdrawn and wish to reapply, or are newly created municipalities or Limited Purpose Local Government Entities may join and become signatories to this Agreement upon approval of, and pursuant to the conditions established by, the Governing Board.

5.6 Notice of Withdrawal.

A Member, including an Ex Officio Member, may withdraw if the governing body of the Member gives written notice of its intent to withdraw from the Governing Board of the ~~Jordan River~~ Commission not less than thirty days after the annual budget and dues structure is established for the following fiscal year. Such withdrawal shall take effect on the last day of the current fiscal year. Any such notice shall not affect the obligation of the Member to pay its financial obligations to the Commission for the current fiscal year, including payment of its annual budget commitment. A withdrawal may not materially adversely affect any project or bonds previously approved by the ~~Jordan River~~ Commission and the governing body of the withdrawing Member. A Member who withdraws its membership shall have no further obligations to the Commission and the Commission shall have no further obligations to the withdrawn Member, except as otherwise expressly provided for herein. The fact that a public agency has previously withdrawn its membership or its membership has been cancelled shall not prohibit said public agency from rejoining the Commission as provided in Section 5.5.

ARTICLE 6

Voting Rights of Members

6.1 Voting by Members and Technical Committee Members.

Each Member of the Governing Board shall be entitled to one vote on the official business that comes before the Board. Technical Committee Members who are not also members of the Governing Board shall not be entitled to vote.

ARTICLE 7

Powers and Authority of the Commission

7.1 Independent Legal Entity; Scope and Location.

The ~~Jordan River~~ Commission ~~shall become~~ became a separate and independent governmental entity on the effective date of ~~this~~ the Original Agreement pursuant to the provisions of ~~this~~ that Agreement and the Interlocal Cooperation Act. The Commission shall continue its operation and existence pursuant to the provisions of ~~this~~ the Original Agreement.

The area for Commission study and action shall include the Jordan River Blueprint Study Area as defined in Article 1.

7.2 Interlocal Cooperation Act Powers.

The ~~Jordan River~~ Commission shall have all powers granted by the Interlocal Cooperation Act and is hereby authorized to do all acts necessary to accomplish its stated purposes, including, but not limited to, any or all of the following:

7.2.1 To make and enter into contracts consistent with Section 7.5.

7.2.2 To acquire, hold, or dispose of its property, contributions, grants, and donations of property, funds, services, and other forms of assistance from persons, firms, corporations, and governmental entities for projects benefitting the Jordan River and the public interest.

7.2.3 To sue and be sued in its own name.

7.2.4 Except as otherwise provided herein, to lawfully cooperate and/or contract with other entities, ~~m~~Members or ~~p~~Parties to accomplish the purposes of this Agreement.

7.2.5 To exercise all powers necessary and proper to carry out the terms and provisions of this Agreement or otherwise authorized by law.

7.2.6 To borrow money or incur indebtedness, liabilities, or obligations; to issue bonds for the purposes for which it was created; to assign, pledge, or otherwise convey as security for the payment of any such bonds the revenues and receipts from or for the Commission, which assignment, pledge, or other conveyance may rank prior in right to any other obligation except taxes or payments in lieu thereof payable to the State of Utah or its political subdivisions.

7.3 Receive Federal and State Grants and Private Funds.

The Commission is hereby authorized to act as an agency to receive federal and state grants; other grants; or loans on behalf of the members ~~s-governments~~, or funds from private organizations for all planning and development programs and projects which are specifically intended to accomplish the purposes under the Interlocal Cooperation Act and the goals of the Commission.

7.4 The Commission has no Superseding Authority.

The Commission has no authority to nor does it supplant any powers of individual ~~Members~~ Members as set forth in the Utah Constitution, state law, county or municipal ordinance, or other powers specifically given to them; nor does the Commission have superseding authority over other government entities and jurisdictions. The Commission shall not have the authority to require alterations of duly adopted plans or decisions of any agency or jurisdiction.

7.5 Contracts.

The Commission may contract generally and, as approved by its Governing Board, enter into contracts or agreements with private organizations, foundations, the federal government, states, counties, municipal corporations, and/or any other governmental agency for any purpose necessary or desirable for dealing with affairs of mutual concern, and/or contract for the provision of services with states, counties, and cities, and to accept all funds resulting therefrom.

7.6 Acquisition of Personal Property.

The Commission may acquire personal property or an undivided, fractional, or other interest in personal property, necessary or convenient for the purposes of the staff of the Commission.

7.7 Acquisition of Real Property.

The Commission may acquire or receive real property or an undivided fractional, or other interest in real property, as approved by the Governing Board, necessary or convenient for the purposes or programs of the Commission.

7.8 Exercise of Powers.

All powers of the Commission shall be exercised pursuant to the terms of this Agreement, its By Laws, and any governing laws.

ARTICLE 8
Responsibilities of the Commission

8.1 Maintain a Jordan River Blueprint.

The Commission shall maintain a Master Jordan River Blueprint (the “Blueprint”) that

incorporates guiding principles, goals, and standards for the acquisition and protection of open space, the protection of the River, and the development or rehabilitative redevelopment of lands affecting the River. The Blueprint Jordan River and the Salt Lake Water Quality Stewardship Plan shall be guidelines for the Commission's activities. The Blueprint shall be reviewed on a regular basis by the Commission and amended or updated as required. The Commission shall consider related studies performed by public or private entities in its review of the Blueprint. In no case shall such reviews be performed less frequently than once each five years.

8.1.1 The Blueprint review and adoption process shall achieve the aforementioned purposes of the Commission by:

8.1.1.1 Identifying and securing funding for staff, operations, programs and projects.

8.1.1.2 Creating advisory committees as needed.

8.1.1.3 Gathering information, including hydrology studies, scientific studies and current land use, recreation, transportation, public facilities, water quality, and natural resource management plans.

8.1.1.4 Undertaking studies and assessments to fill in information gaps.

8.1.1.5 Identifying corrective actions needed to restore and/or maintain the ecological integrity of the river, including the chemical, physical, environmental, wildlife, and biological integrity of the Jordan River Blueprint study area.

8.1.1.6 Soliciting public input and participation throughout the process.

8.1.2 The Jordan River Blueprint shall include the following correlated elements:

8.1.2.1 A land use plan which considers Public Trust responsibilities for the management of the river as a basis for making decisions regarding the river and the lands adjacent to it. The Jordan River Blueprint process shall balance economic benefits, public access, use and enjoyment, and protection. It shall develop recommendations for use by public agencies in developing plans for the river and adjacent lands including land use planning coordination.

8.1.2.2 A transportation plan which includes consideration for roads, trails, mass transit, access areas, buffer zones, restrictions and limitations.

8.1.2.3 A natural resources conservation and management plan which includes, but is not limited to, improving the quality of the river and its water in order to improve all aspects of conservation, recreation, wildlife, riparian interests, wetlands, and open space.

8.1.2.4 A recreation plan which includes consideration for trails, entry points, public access areas and other areas of public interest.

8.1.2.5 A public services and capital facilities plan.

8.1.2.6 A protection plan for the river and critical lands.

8.1.2.7 Prioritization of land and resource acquisition necessary for the protection of the river, development of it as a recreational resource, and protection of the river's ecosystem.

8.1.3 General Plans. The Jordan River Blueprint shall take into consideration the General Plans of public agencies having jurisdiction over the river or its adjacent lands. The Commission shall utilize its Technical Advisory Committee as needed to assist in the preparation of the Jordan River Blueprint.

8.1.4 The Commission shall coordinate the implementation of the Jordan River Blueprint as follows:

8.1.4.1 Have regular publicized meetings to receive input from the public, governmental agencies, private landowners and other organizations and manage the many aspects of implementing, reviewing, and monitoring the Jordan River Blueprint.

8.1.4.2 Establish policies and procedures that assure problem solving, communication, and coordination with governmental agencies that are not ~~m~~Members of the Commission.

8.1.4.3 Ensure public participation is encouraged and solicited.

8.1.4.4 Review governmental agencies currently adopted plans for the Jordan River Blueprint Study Area and recommend additions or changes in conformance with the Jordan River Blueprint. This review will include offering assistance, technical

reviews and coordination of all planning and activities that will impact the river and the landholders in the Jordan River Blueprint Study Area.

8.1.4.5 Review governmental agencies' ordinances, rules, standards, and regulations and recommend additions or changes in conformance with the Jordan River Blueprint, upon request of the member government.

8.2 Effect of Vote.

Adoption by vote of the Board shall be the consensus of the Commission and Members and Ex Officio ~~m~~Members should all work in unity to implement measures necessary to carry out that which has been adopted.

8.3 Review of Private Development Proposals.

Upon approval by the Board of processes for the review of private development plans, programs and proposals, including residential, commercial, and recreational developments, ("private submissions"), the Commission will review all such private submissions for lands within one-half mile from the River. The Commission shall review private development proposals as they occur, upon request of the affected Member or the private party. The Commission shall provide timely comments regarding Jordan River Blueprint consistency on the proposed development to the local jurisdiction and the proponent of the development. The Commission may work with the parties to resolve any issues of inconsistency by providing detailed research, suggestions, and advisory and technical support required to bring the private submission into consistency with the Jordan River Blueprint. The comments of the Commission are advisory only and final approval of the specifics of any plan shall be left to the sole discretion of the reviewing agency that has jurisdiction over said submission.

8.4 Review of Proposed Governmental Agency Actions.

Upon approval by the Board of processes for the review of government agency plans, programs, proposals, regulations, ordinances, rules or modifications thereof ("agency submissions"), the Commission will review all such agency submissions that affect lands within one-half mile from the River for consistency with the Jordan River Blueprint. The Commission shall review governmental agency actions as they occur, upon request of the affected Members. The Commission shall provide timely comments regarding Jordan River Blueprint consistency on the proposed proposal to the public agency. The Commission may work with the agency to resolve any issues of inconsistency by providing detailed research, suggestions, and advisory and technical support required to make the agency submission consistent with the Jordan River Blueprint. The comments of the Commission are advisory only and final approval of the

specifics of any plan shall be left to the sole discretion of the reviewing agency that has jurisdiction over said submission.

8.5 Adoption of Uniform Ordinances and Standards.

The Commission shall have the power to recommend by resolution, any ordinances, rules, regulations or policies not inconsistent with state law which are necessary, appropriate, or incidental to effectuate the Jordan River Blueprint. The resolutions shall recommend general standards, including but not limited to the following: water quality, subdivision development, zoning, solid waste disposal, sewage disposal, tree removal, development in the river flood plain, outdoor recreation, flood plain protection, soil and sedimentation control, air pollution and watershed protection. Whenever possible without diminishing the effectiveness of the Jordan River Blueprint, the recommended ordinances, rules, regulations and policies shall be confined to matters which are general in nature. The comments of the Commission are advisory only and the specifics of any such matter adopted by a governmental jurisdiction shall be left to the sole discretion of the adopting agency.

8.6 Require the Permanent Conservation of Acquired or Restored Critical Habitat or Open Space.

The Commission shall require that, as soon as is practical, any lands acquired or restored with the use of funds generated by the Commission for the purpose or purposes of critical habitat be permanently preserved through placing an appropriate deed restriction, conservation easement or other like encumbrance that perpetually protects the resources of and on the property. The deed restriction, conservation easement or other like encumbrance shall be held by a third party entity approved of by a vote of the Commission.

8.7 Identify Maintenance Needs.

Continually identify maintenance projects and opportunities for improvements that should be pursued; develop funding, an annual work program, and a long-range strategy to carry out the projects.

ARTICLE 9
Liabilities and Obligations of Members

9.1 Governmental Immunity.

In entering into this Agreement, the Members do not waive, and are not waiving, any immunity provided to the Members or their officials, employees, or agents by the Governmental

Immunity Act of Utah, Title 63G, Chapter 7, Utah Code (the “Immunity Act”), or by other law.

9.2 Waiver of Obligations.

This Agreement shall not relieve any Member of any obligation or responsibility imposed upon it by law. However, to the extent of actual and timely performance thereof by the ~~Jordan River~~ Commission, such performance may be offered in satisfaction of such obligation or responsibility.

9.3 Obligations Special and Limited.

The obligations entered into by each Member pursuant to this Agreement are special limited obligations of each such Member, and nothing herein shall be construed or give rise to a general obligation or liability of any Member or a charge against its general credit or taxing powers. Members may enter into agreements to pledge revenues to finance projects undertaken by the Commission and to secure the bonds issued by the ~~Jordan River~~ Commission to finance such projects ~~undertaken by the Commission~~. Such pledges shall constitute ongoing financial obligations of the pledging Members only to the extent expressly authorized by the governing body of each Member and as provided for in the agreement authorizing the issuance of the bonds and pledging the revenues of the pledging ~~m~~Member.

9.4 Bonding.

Any Bonds issued or incurred by the ~~Jordan River~~ Commission shall not constitute a debt of any individual Member, but shall be secured only in the manner set forth herein and pursuant to the terms of the separate agreement entered into by the individual pledging ~~member~~ Member authorizing the issuance of the Bonds. There shall be no additional liability or obligation of a Member except as provided in Section 9.3.

9.5 Indemnification.

The ~~Jordan River~~ Commission shall defend, indemnify, save harmless, and exempt the Members, their officers, agents, and employees from and against all claims, suits, legal proceedings, demands, damages, costs, expenses, and attorneys’ fees incident to any willful or negligent acts or omissions by the Commission, its officers, agents, or employees. The Governing Board shall, prior to the commencement of construction of any project undertaken by the Commission provide for risk and liability coverage and payment and performance bonds in such amounts as the Commission deems necessary to insure against risks arising from the undertaking the project.

ARTICLE 10
Governing Board

10.1 Appointment.

There is hereby created a Governing Board of the ~~Jordan River~~ Commission which shall consist of the following:

10.1.1 Appointed elected officials from each participating county, appointed in accordance with Section 5.3 and each county's respective rules or ordinances governing appointments to Boards;

10.1.2 An appointed elected official from each of the participating municipalities, appointed in accordance with each municipality's respective rules governing appointments to Boards;

10.1.3 An appointed representative of each department, division or agency of the State of Utah participating in the Commission as determined by the executive director of the department, division or agency;

10.1.4 One individual appointed by the Governor of the State of Utah;

10.1.5 A member of the Utah Legislature whose District includes all or a portion of the Jordan River, appointed jointly by the President of the Senate and the Speaker of the House;

10.1.6 An appointed representative of each Ex Officio ~~m~~Member appointed by that organization's governing body; and

10.1.7 An appointed member from each Limited Purpose Local Government Entity appointed in accordance with that entity's adopted policies or procedures

10.2 Terms.

The Governing Board members shall serve until replaced by the respective ~~m~~Member or Ex Officio Member that appointed the Board member or until no longer qualified to serve by virtue of no longer serving as an elected official. Reappointments and replacements should be by appointment of the public agency who appointed the ~~m~~Member being replaced or reappointed.

10.3 Compensation.

Members of the Governing Board shall serve without compensation and have their expenses paid by their appointing agency.

10.4 Leadership.

The Governing Board shall have a Chair, ~~and a Vice-Chair, and Past Chair~~ elected by and from their members, whose term shall ~~expire every two years~~ be set in the By Laws. ~~The Chair and Vice chair shall not serve successive terms.~~

10.5 Alternates.

The Board representative may send an alternate to act in his or her place at a Board or Executive Committee meeting, except if the Board representative is the Chair, then that Board representative's responsibilities for conducting the meeting or signing documents shall fall to the Vice-Chair.

10.6 Regular Meetings.

The Governing Board should hold regularly scheduled public meetings to accomplish the objectives of the ~~Jordan River~~ Commission and adopt, amend and repeal By Laws, rules, policies and procedures for the conduct of their affairs. The Board shall hold at least one regular meeting annually. Meetings may be conducted by telephonic or other electronic means of communication. All meetings shall be noticed and conducted in accordance with the Utah Open and Public Meetings Act.

10.7 Minutes.

The Governing Board shall cause to be kept minutes of all meetings of the Board in accordance with the Utah Open and Public Meetings Act. As soon as possible after each meeting, a draft copy of the minutes shall be forwarded to each member of the Board.

10.8 Majority Vote.

The presence of the Board members entitled to cast a majority of the votes of the entire Board shall constitute a quorum for the transaction of business. Unless otherwise requiring a 2/3 or greater vote or a majority vote of all Members, a majority vote of the total votes of the Board members present when a quorum exists, shall constitute action by the Board.

10.9 Notice of Meetings.

Notice to Board members shall be sufficient if delivered in writing, by fax, or by e-mail to the designated representative of the respective Member, at the address, fax number, or e-mail address provided. Public notice of meetings shall be given in accordance with the Utah Open and Public Meetings Act.

10.10 Requests for Information.

The Governing Board shall have an ongoing duty to see that all of its Members are informed regarding all activities of the Commission and, accordingly, shall cause a copy of all materials (unless they are not public records; in which case, notice of their existence shall be given) delivered in the manner it deems appropriate to Board members for meetings of the Board, including meeting agendas and minutes of past meetings, and to such other persons as the Member may request in writing, including each Member's legal counsel. The Executive Director shall promptly respond to all requests for information made by any Member.

ARTICLE 11
Powers and Duties of the Governing Board

The Governing Board shall have the following powers and duties:

11.1 Executive Committee.

The Governing Board shall have the authority to appoint an Executive Committee consisting of ~~not more than seven (7)~~ members of the Board.

11.1.1 The Executive Committee shall include ~~a representative of the State of Utah, a Past Chair elected by the Board~~, the Chair ~~of the Board~~, the Vice-Chair ~~of the Board~~ and other members as determined by the Board through its By Laws.

11.1.2 The Board may delegate to the Executive Committee such powers and responsibilities as the Board deems appropriate.

11.1.3 The voting, powers, and responsibilities of the Executive Committee shall be as established in the By Laws of the Commission.

11.1.4 The Governing Board may not delegate the following powers and duties: (i) the election of the Past Chair, Chair and Vice Chairs of the Board; (ii) the election of

the group representatives to the Executive Committee; (iii) the power to adopt, modify, and approve changes in the By Laws and the power to recommend proposed changes to the Agreement that must be approved by the Members' governing bodies; (iv) the power to terminate or dissolve the ~~Jordan River~~ Commission; and (v) the adoption of budgets, amendment of budgets or the allocation or reallocation of budgeted amounts between budget categories.

11.1.5 Other Committees. The Governing Board shall have the authority to appoint additional committees made up of members of the Governing Board and such other individuals as are approved by the Board. It shall also have authority to establish committees separate and apart from the Technical Committee established in Article 12, to advise and confer with the Governing Board and the Technical Advisory Committee.

11.1.5.1 Membership of the various committees shall be at the will and pleasure of the Governing Board, for time limited or project limited assignments, and are not permanently associated with the Commission.

11.1.5.2 The various committees shall engage in such projects and reviews as assigned by the Governing Board.

11.2 Executive Reports.

The Governing Board shall receive and act upon reports of the Executive Committee and of the Executive Director.

11.3 Executive Director and Staff.

The Governing Board may hire a limited staff including appointing an Executive Director on such terms and conditions as the Board determines appropriate, and may employ such persons as the Board deems necessary for the proper administration of the Commission. The Governing Board shall have the general supervisory and policy control over the day to day decisions and administrative activities of the Executive Director.

11.4 By Laws.

The Governing Board shall ~~have the authority to~~ adopt By Laws in compliance with state law and as otherwise deemed needed by the Governing Board and thereafter amend the By Laws in compliance with state law. The adoption and any amendments shall be by a seventy-five percent (75%) vote of the Board. Each Member shall receive a copy of the By Laws.

11.5 Rules.

The Governing Board shall have the authority to establish rules governing its own conduct and procedures not inconsistent with the By Laws.

11.6 Records.

The records of the Commission shall be governed by the “Government Records Access and Management Act,” Section 63G-2-101, et seq., to the extent applicable, except that the governing body and/or legal counsel of each Member shall have full access to inspect all records and copy public records of the Commission.

11.7 Policies and Procedures.

The Governing Board shall adopt policies and procedures in compliance with state law and as otherwise deemed needed by the Governing Board, and thereafter amend the policies and procedures. The adoption and amendments shall be by a majority vote of the Board. Each Member shall receive a copy of the policies and procedures.

ARTICLE 12
Technical Advisory Committee

12.1 Creation.

There is hereby created a Technical Advisory Committee to the Commission which shall consist of appointed representatives as follows:

12.1.1 One representative from each participating county, appointed in accordance with each county’s respective rules governing appointments to Boards;

12.1.2 One appointed representative from each of the participating municipalities listed in Appendix 1, appointed in accordance with each municipality’s respective rules governing appointments to Boards;

12.1.3 One appointed representative from the Department of Environmental Quality, Division of Water Quality and each of the following Divisions of the Department of Natural Resources: Division of Wildlife Resources, Division of Forestry, Fire and State Lands; Division of Parks and Recreation; and the Division of Water Resources, as determined by the Department;

12.1.4 One appointed representative of the Jordan Valley Water Conservancy District, appointed by its board;

~~12.1.5 One appointed representative of the Utah Department of Environmental Quality, as determined by the Department; and~~

12.1.65 Three individuals representing the Ex Officio ~~m~~Members appointed by majority vote of the Ex Officio ~~m~~Members.

12.1.76 One member from each local district or public utility designated by the Governing Board for participation on the Technical Advisory Committee. The Governing Board shall choose one or more local districts or utilities operating in the jurisdictions of the Members to represent the interests of all such local districts or utilities.

12.1.87 Additional members as appointed by the Governing Board.

12.2 Terms.

~~The terms of~~ Technical Advisory Committee members shall ~~each be appointed for four year terms of office be set in the By Laws. One half of the initial members shall serve two year terms as determined by lot.~~ Reappointments and replacements shall be by appointment of the public agency who appointed the member being replaced or reappointed or by vote of the Ex Officio ~~m~~Members.

12.3 Compensation.

Members of the Technical Advisory Committee shall serve without compensation by the Commission and shall have their expenses paid by their appointing agency.

12.4 Leadership.

The Technical Advisory Committee shall have a Chair and a Vice-Chair elected by and from their members, whose term shall ~~expire every two years~~ be set in the By Laws. ~~The chair and vice-chair shall not serve successive terms.~~

12.5 Advice.

The Technical Advisory Committee shall advise the Governing Board with respect to the technical aspects of the Governing Board's work including water rights affecting the River,

maintaining or amending the Jordan River Jordan River Blueprint, standards, goals, best management practices and recommendations for uniform rules, regulations, policies and ordinances.

12.6 Meetings.

Unless otherwise provided by By Laws or resolution of the Board, the Technical Advisory Committee shall meet as often as it deems necessary to conduct its business.

12.7 Information Gathering.

The Technical Advisory Committee, on its own initiative or when requested by the Board or Executive Director, shall gather information, investigate the appropriate issues, and make recommendations to the Board.

12.8 Subcommittees.

The Technical Advisory Committee may create subcommittees from among its members and appoint others to work with said committees as it deems necessary to fulfill its purposes and specific assignments.

ARTICLE 13
Funding, Budget, Accounts and Financial Records

13.1 Funding; Investment and Disbursement of Funds.

The Members, including Ex Officio ~~m~~M~~m~~Members, shall contribute based on a formula developed and approved by the Board to cover annual operating expenses, including projects approved by the Board. Other sources of funding could include fees and contributions from other Federal agencies, State agencies, local governments, grants from private individuals or organizations, developers, and businesses. Failure of a ~~m~~M~~m~~Member to provide its contribution shall constitute a breach of this Agreement. The Governing Board shall provide for the investment and disbursement of funds and their periodic review.

13.2 Annual Budget.

The Governing Board shall annually adopt an operating budget pursuant to the provisions of this Agreement, By Laws or policies adopted by the Governing Board and applicable law. The

annual budget shall be approved by the Governing Board not less than sixty days prior to the end of the fiscal year. A funding formula for calculating Member contributions and dues established by the Board may be modified by a 2/3 vote of the Commission Members, but such changes shall not take effect until the beginning of a new budget year. The Members recognize and agree that all individual ~~Member~~ Member contributions for annual dues or project costs are subject to the availability and appropriation of funds by that Member.

13.3 Funds and Accounts.

The Executive Director shall establish and maintain such funds and accounts as may be required by governmental accounting practices and the State's fiscal procedures act. Financial records of the Commission shall be open to inspection at all reasonable times by Members' representatives and shall be public records if so required by Utah State law.

13.4 Certified Annual Audit.

The Governing Board shall provide for a certified annual audit, or other financial reporting as required by law, of the accounts and records of the ~~Jordan River~~ Commission, which ~~audit~~ shall conform to generally accepted auditing-accounting standards and requirements set forth by the Utah State Auditor. Such annual audit shall be open for inspection by each Member representative at all reasonable times.

13.5 Executive Director's Responsibility for Funds.

The Executive Director shall have custody of and shall disburse the Commission's funds. The Executive Director shall have the authority to delegate the signatory function to such persons as are authorized by the Governing Board.

13.6 Fidelity Bonds.

Unless otherwise provided for by the Governing Board, a fidelity and/or treasurer's bond may be required of all officers, agents, and personnel authorized to disburse funds of the Commission. The cost of such bond shall be paid by the Commission.

13.7 Financial Records.

The Executive Director shall keep and maintain, or cause to be kept and maintained, adequate and correct financial records, including accounts of its assets, liabilities, receipts, and disbursements, and shall have such other duties as are provided for in the By Laws.

13.8 Selling of Services.

The Executive Director may authorize the sale of the Commission's services, output or products to other entities upon approval of the Board.

ARTICLE 14
Dissolution of the Commission

14.1 Outstanding Indebtedness.

So long as there are any outstanding Bonds or other indebtedness of the Commission, the Commission shall remain a separate legal entity with all of the powers and duties set forth in this Agreement and all of the responsibilities, covenants, and obligations required in the Bond documents.

14.2 Dissolution of the Commission by Vote.

If there are no outstanding Bonds or other indebtedness that cannot be covered by current funds, the Commission may be dissolved with a seventy-five percent (75%) vote of the Members at any time.

14.3 Powers of Governing Board Upon Dissolution.

The Governing Board is vested with all powers necessary for the purpose of winding up and dissolving the business affairs of the ~~Jordan River~~ Commission consistent with and subject to the limits of this Agreement.

14.4 Division of Assets.

Upon dissolution and after payment in full of all outstanding Bonds and other Commission obligations, the Governing Board shall equitably disburse the assets of the Commission to the then current Members. After deducting costs, any cash or other assets jointly shared shall be disbursed, or interests deeded, pro rata.

ARTICLE 15
Filing of this Interlocal Cooperation Agreement

A copy of this Interlocal Cooperation Agreement shall be placed on file in the office of the Official Record Keeper of each public agency that is a Member hereto and shall remain on file for public inspection during the term of this Agreement.

ARTICLE 16
Miscellaneous Provisions

16.1 Confidentiality.

The Governing Board and Technical Advisory Committee shall take such steps as they deem necessary to protect and keep confidential appropriate information received or kept by it in accordance with the Government Records Access and Management Act. The Members shall protect and keep confidential information kept or received by the Commission during the term of this Agreement and after the termination of their membership in the Commission pursuant to the By Laws or other policies adopted by the Board and consistent with law. Nothing in this section shall be construed to allow the Board, the Technical Advisory Committee, the Officers or employees from withholding information from any Commission Member, so long as the Member agrees to maintain the confidentiality of such information.

16.2 Status of Members' Employees.

When members of the Governing Board and the Technical Advisory Committee, and the employees and agents of the Commission are acting on behalf of the Commission within the scope of their authority, office or employment, they shall be considered to be acting on behalf of their respective public agency employer within the meaning of the Governmental Immunity Act and Section 63G-7-101, et seq., and thus, shall be entitled to indemnification and representation so long as they meet the requirements of said Act.

16.3 Prohibition Against Assignment.

No Member may assign any right, claim, or interest it may have under this Agreement; and no creditor, assignee, or third party beneficiary of any Member shall have any right, claim, or title to any asset of the Commission.

16.4 Severability Clause.

In the event that any article, provision, clause, or other part of this Agreement should be held invalid or unenforceable by a court of competent jurisdiction, such invalidity or unenforceability will not affect the validity or enforceability with respect to other articles, clauses, applications, or occurrences, and this Agreement is expressly declared to be severable.

16.5 Complete Agreement.

The foregoing constitutes the full and complete Agreement of the parties. There are no oral understandings or agreements not set forth in writing herein.

16.6 Amendment.

This Agreement may be amended at any time by the written approval of seventy-five percent (75%) of all current Members signatory to it.

16.7 Governing Law.

This Agreement shall be governed according to the laws of the State of Utah.

16.8 Binding Effect.

This Agreement shall bind the parties, their successors and assigns.

16.9 Captions.

The captions to the various Sections of this Agreement are for convenience and ease of reference only and do not define, limit, augment, or describe the scope, content, or intent of this Agreement or any part or parts of this Agreement.

16.10 Time.

Time is of the essence of each term, provision, and covenant of this Agreement.

16.11 Appendices and Exhibits.

The Appendices attached hereto, and those Appendices and Exhibits subsequently attached hereto from time to time by a seventy-five percent (75%) vote of the Governing Board, shall be considered to be a part of this Agreement and binding upon all parties. The parties'

signatures on any Appendices and Exhibits shall be evidence that the same are accepted.

16.12 Counterparts.

This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which shall constitute one and the same instrument.

16.13 Breach of Agreement.

The failure of a party to substantially comply with the material terms and conditions of this Agreement shall constitute a breach of this Agreement. A party shall have thirty (30) days after receipt of written notice to correct the conditions specified in the notice, or if the corrections cannot be made within the thirty (30) day period, within a reasonable time if corrective action is commenced within ten (10) days after receipt of the notice. After notice, if corrective action is not taken, the Board may take appropriate action including revocation of the breaching party's membership.

SIGNATURE PAGE

INTERLOCAL COOPERATION AGREEMENT

**MODIFYING THE 2010 INTERLOCAL COOPERATION AGREEMENT
THAT ESTABLISHED THE**

JORDAN RIVER COMMISSION

IN WITNESS WHEREOF, the parties have signed and executed this Interlocal Cooperation Agreement amending the 2010 Interlocal Cooperation Agreement that created the Jordan River Commission, after resolution duly and lawfully passed, on the dates listed on the signatory pages, below, to become effective on the Effective Date, first written above.

[ENTITY]

By _____

[Title]



NORTH SALT LAKE COMMUNITY AND ECONOMIC DEVELOPMENT

10 East Center Street
North Salt Lake, Utah 84054
(801) 335-8700
(801) 335-8719 Fax

MEMORANDUM

TO: Honorable Mayor and City Council

FROM: Ken Leetham, Assistant City Manager

DATE: October 6, 2015

SUBJECT: Presentation on proposed Geologic Hazards Ordinance

BACKGROUND

The City Council instructed City staff to prepare needed amendments to the City Code related to geologic hazards and development in foothill locations. We have been working on this assignment for the past several months and want to present to you the draft ordinance and discuss how the ordinance is proposed to be implemented.

The Planning Commission has had two work meetings on this topic (one with this draft) and is intending to make a recommendation to the Council at their regular meeting on October 13. Geostrata, the City's geotechnical consultant is also reviewing this draft.

Attachments

- 1) Proposed Geologic Hazard Ordinance

Chapter 12

SENSITIVE AREA DISTRICT & GEOLOGIC HAZARDS

10-12-010: PURPOSE:

10-12-020: DEFINITIONS:

10-12-030: APPLICABILITY:

10-12-040: RESPONSIBILITY FOR GEOLOGIC HAZARD STUDIES:

10-12-050: MINIMUM QUALIFICATIONS OF THE GEOLOGIST:

10-12-060: MINIMUM QUALIFICATIONS OF THE ENGINEER:

10-12-070: PRELIMINARY ACTIVITIES:

10-12-080: GEOLOGIC HAZARDS INVESTIGATION PERMIT:

10-12-090: GEOLOGIC HAZARD STUDIES AND REPORTS REQUIRED:

10-12-100: GEOLOGIC HAZARD REPORTS:

10-12-110: REVIEW OF GEOLOGIC HAZARD REPORTS:

10-12-120: LAND DISTURBANCE PERMIT REGULATIONS

10-12-130: COMPLIANCE WITH PERMIT:

10-12-140: PROTECTIVE DEVICES:

10-12-150: MAINTENANCE OF SITE:

10-12-160: ACCESS AND HAUL ROUTES:

10-12-170: CONSENT OF ADJACENT PROPERTY OWNERS:

10-12-180: CUTS AND FILLS:

10-12-190: EROSION CONTROL AND DRAINAGE DEVICES:

10-12-200: AREAS SUBJECT TO SLIDES AND UNSTABLE SOIL:

10-12-210: PLANTING AND IRRIGATION OF CUT AND FILL SLOPES:

10-12-220: LOT STANDARDS AND IDENTIFICATION OF BUILDING ENVELOPE:

10-12-230: PROPERTY LINE AND CORNER MARKERS:

10-12-240: SLOPE PROTECTION EASEMENTS:

10-12-250: MASTER DRAINAGE PLAN REQUIRED:

10-12-260: LANDSCAPING OF CERTAIN LOTS FOR EROSION CONTROL:

10-12-270: EROSION CONTROL AND REVEGETATION:

10-12-280: WET WEATHER PLAN:

10-12-290: DISCLOSURE WHEN A GEOLOGIC HAZARD REPORT IS REQUIRED:

10-12-300: WARNING AND DISCLAIMER:

10-12-310: CHANGE OF USE:

10-12-320: CONFLICTING REGULATIONS:

10-12-330: APPENDICES:

10-12-330-1: APPENDIX A, MINIMUM STANDARDS FOR SURFACE FAULT RUPTURE HAZARD STUDIES:

10-12-330-2: APPENDIX B, MINIMUM STANDARDS FOR SLOPE STABILITY ANALYSIS:

10-12-330-3: APPENDIX C, MINIMUM STANDARDS FOR LIQUEFACTION INVESTIGATIONS AND EVALUATIONS:

10-12-010: PURPOSE:

A. The purpose of the SA district is to designate and describe those areas within the city that possess environmental characteristics which require special public consideration of use applications which might affect the structure of the land. These "sensitive land development regulations" provide standards, guidelines and criteria, having the effect of minimizing flooding, fire, erosion, and other natural and manmade hazards, and protect people and property while protecting the natural scenic character of the sensitive land areas not suitable for development, or suitable for development only after mitigation of hazards and ensuring the efficient expenditure of public funds.

Comment [S31]: Existing Language 10-12-1

B. The standards, guidelines and criteria to be achieved by the SA district overlay zone shall include, but not be limited to, the following:

1. The protection of the public from natural and manmade hazards;
2. The minimizing of the threat and consequential damages of fire in foothill areas by establishing fire protection measures;
3. The preservation of natural features, wildlife habitat and open space;
4. The preservation of public access to mountain areas and natural drainage channels;
5. The preservation and enhancement of visual and environmental quality by use of natural vegetation and the prohibition of excessive excavation and terracing;

Planning Commission Draft 9/29/15

6. The establishment of traffic circulation facilities that ensure ingress and egress for vehicles, including emergency vehicles, into all developed areas at any time of the year with minimal cuts, fills or visible scars;
 7. The encouragement of variety of development designs and concepts that are compatible with the natural terrain of the foothill areas, that will preserve open space and natural landscape;
 8. The establishment of land use management criteria that will encourage protection of natural elements while allowing a harmonious and satisfying residential environment;
 9. Encouragement of regard for the view of the foothills, as well as the view from the foothills;
 10. Determine areas in the city that, due to geologic hazards, may not be suitable for development, or may require engineering measures to reduce the hazards to an acceptable level. (Ord. 01-05, 4-3-2001)
- C. The purpose of geologic hazards regulations are to protect the health, safety, and welfare of the citizens of The City of North Salt Lake, protect the City's infrastructure and financial health, and minimize adverse effects of geologic hazards to public health, safety, and property by encouraging wise land use.
- D. This chapter and its appendices address surface fault rupture, slope stability, and liquefaction hazards and present minimum standards and methods for evaluating geologic hazards.
- E. Results of geologic hazard studies shall comply with this chapter and its appendices. The standards set forth in the appendices are minimum requirements. More complex projects may require more detailed and in depth evaluations than outlined herein. In addition, the appendices shall not supersede other more stringent requirements that may be required by other regulatory agents.
- F. Site specific geologic hazard assessments performed by qualified engineering geologists shall be required prior to developing projects located within a Sensitive Lands District or otherwise required areas of potential geologic hazard. The developer shall submit the applicable study and complete the report process outlined in this chapter.

10-12-020: DEFINITIONS:

As used in this chapter:

ACCEPTABLE AND REASONABLE RISK: No loss or significant injury to occupants, no release of hazardous or toxic substances, and minimal structural damage.

ACCESSORY BUILDING: Any structure not designed for human occupancy, which may include tool or storage sheds, gazebos, and swimming pools.

ACTIVE FAULT: A fault displaying evidence of displacement along one or more of its traces during Holocene time, which is approximately ten thousand (10,000) years ago to the present.

AVALANCHE: A large mass of snow, ice, soil or rock, or a mixture of these materials, falling, sliding, or flowing rapidly under the force of gravity.

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BEST MANAGEMENT PRACTICES (BMP)- Activities, facilities, measures, planning or procedures used to minimize erosion and sedimentation and manage stormwater before, during, and after earth disturbance activities.

BUILDABLE AREA: Based on an accepted engineering geology report, the portion of a site not impacted by geologic hazards, or the portion of a site where it is concluded the identified geologic hazards can be mitigated to a level where risk to human life, property and city infrastructure are reduced to an acceptable and reasonable level and where structures may be safely sited.

CITY: The public works director, city engineer, community development director, planning manager, building official or other city employee.

CITY COUNCIL: The city council of The City of North Salt Lake.

CRITICAL FACILITIES: Essential, hazardous, special occupancy facilities, and occupancy categories III and IV as defined in the currently adopted international building code, and lifelines such as major utility, transportation, and communication facilities and their connections to critical facilities.

DEBRIS FLOW: A slurry of rock, soil, organic material, and water transported in an extremely fast and destructive flow that flows down channels and onto and across alluvial fans; including a continuum of sedimentation events and processes including debris flows, debris floods, mudflows, clear water floods, and alluvial fan flooding.

DEVELOPMENT: All critical facilities, subdivisions, single- and multi-family dwellings, commercial and industrial buildings; also additions to or intensification of existing buildings, storage facilities, pipelines and utility conveyances, and other land uses.

ENGINEERING GEOLOGIST: A Utah licensed geologist, who, through education, training, and experience, is competent in applying geologic data, geologic techniques, and geologic principles, which includes conducting field investigations, so that geologic conditions and geologic factors affecting engineered works, groundwater resources, and land use planning are recognized, adequately interpreted, and clearly presented for use in engineering practice, land use planning, and for the protection of the public, and who utilizes specialized geologic training and experience to provide quantitative geologic information and recommendations and also works with and for land use planners, environmental specialists, architects, public policy makers, and property owners to provide geologic information on which decisions can be made.

ENGINEERING GEOLOGY: Geologic work that is relevant to engineering and environmental concerns, and the public health, safety, and welfare. Engineering geology is the application of geological data, principles, and interpretation so that geological factors affecting planning, design, construction, and maintenance of engineered works, land use planning, and groundwater resources are adequately recognized and properly interpreted for use in engineering, land use planning, and related practice.

ESSENTIAL FACILITY: Buildings and other structures intended to remain operational in the event of an adverse geologic event, including all structures defined in section 10-12-160, "Table 1", of this chapter.

FAULT: A fracture in the earth's crust forming a boundary between rock or soil masses that have moved relative to each other.

FAULT SETBACK: An area on either side of a fault within which structures for human occupancy or critical facilities or their structural supports are not permitted.

FAULT SCARP: A steep slope or cliff formed by movement along a fault.

FAULT TRACE: The intersection of a fault plane with the ground surface, often present as a fault scarp, or detected as a lineament on aerial photographs.

FAULT ZONE: A corridor of variable width along one or more fault traces, within which deformation has occurred.

GEOLOGIC HAZARD: A surface fault rupture, liquefaction, slope stability, landslide, debris flow, and/or rockfall that may present a risk to life or property.

GEOLOGIC HAZARD STUDY AREA: A potentially hazardous area as shown on the geologic hazard study area maps within which hazard investigations are required prior to development.

GEOTECHNICAL ENGINEER: A professional, Utah licensed engineer who, through education, training and experience, is competent in the field of geotechnical engineering.

GEOTECHNICAL ENGINEERING: The investigation and engineering evaluation of earth materials including soil, rock, and manmade materials and their interaction with earth retention systems, foundations, and other civil engineering works. The practice involves the fields of soil mechanics, rock mechanics, and earth sciences and requires knowledge of engineering laws, formulas, construction techniques, and performance evaluation of engineering.

GOVERNING BODY: The city council, or a designee of the city council.

LANDSLIDE: The downslope movement of a mass of soil, surficial deposits or bedrock, including a continuum of processes between landslides, and earth flows..

LIQUEFACTION: A process by which certain water saturated soils lose bearing strength because of earthquake related ground shaking and subsequent increase of groundwater pore pressure.

NONBUILDABLE AREA: That portion of a site which a geologic hazards report has concluded may be

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impacted by geologic hazards that cannot be reasonably mitigated to an acceptable level, and where the siting of habitable structures, structures requiring a building permit, or critical facilities, is not permitted.

ROCKFALL: A rock or mass of rock, newly detached from a cliff or other steep slope which moves downslope by falling, rolling, toppling, or bouncing; includes rockslides, rockfall avalanches, and talus.

SETBACK: An area within which support of habitable structures or critical facilities is not permitted.

SLOPE STABILITY: The resistance of a natural or artificial slope or other inclined surface to failure by landsliding, usually assessed under both static and dynamic (earthquake induced) conditions.

STRUCTURE DESIGNED FOR HUMAN OCCUPANCY: Any residential dwelling or any other structure used or intended for supporting or sheltering any use or occupancy, which is expected to have an occupancy rate of at least two thousand (2,000) person hours per year, but does not include an accessory building.

10-12-030: APPLICABILITY:

- A. The provisions of this chapter shall apply to all zoning districts in the city and shown as within the sensitive lands overlay area on the sensitive lands map or any other areas as required by 10-12-030(E). (Ord. 01-05, 4-3-2001)
- B. This chapter makes additional provisions to those otherwise set forth in the land use and subdivision ordinances, and other chapters of the act. Additional requirements not covered in this chapter may be required by the ~~construction staff~~ City Engineer if they determine that it reasonably appears that there are additional hazards associated with the site. In the event of conflict between such foregoing designated chapters of this title, the more restrictive provisions shall apply. (Ord. 01-05, 4-3-2001; amd. 2012 Code)
- C. The provisions of these amendments do not create any obligation or right as to any development, nor do they have application to subdivisions, planned unit developments, or other construction projects, which have been granted preliminary approval prior to the adoption of this chapter. (Ord. 01-05, 4-3-2001)
- D. Subdivisions, planned unit developments, or other construction projects, whose preliminary or final plat approvals have expired or are proposed to be redeveloped, further subdivided or amended, shall be subject to the provisions of this chapter.
- E. Additional Property Outside Overlay Zone. Properties located outside the boundaries of the Sensitive Lands Overlay Map will be subject to the regulations and standards of this chapter in the event that the City Engineer determines the property to have any of the following: an average slope of fifteen (15%) or greater; known, suspect, or probable geologic hazards; critical wildlife habitat or natural features; critical drainage channels or other vital infrastructure.

Comment [S22]: Existing code 10-12-2(A)

Comment [S33]: Existing Code 10-12-2(B)

Comment [S34]: Existing Code 10-12-2(C)

10-12-040: RESPONSIBILITY FOR GEOLOGIC HAZARD STUDIES:

- A. Geologic hazard studies often involve both engineering geology and geotechnical engineering. Engineering geologic studies shall be performed under the direct supervision of a qualified engineering geologist. Geotechnical engineering studies shall be performed under the direct supervision of a qualified geotechnical engineer.
- B. Project developers and their consultants shall present the results of geologic hazard studies in compliance with this chapter and its appendices. The standards set forth in the appendices to this chapter are the city's minimum requirements, but may be made more stringent (in specific, fact-sensitive circumstances) by the DRC based on recommendations of the city engineer or city geologic consultant, or designee, if evidence becomes available that suggests more stringent requirements are appropriate. In addition, the appendices shall not supersede other more stringent requirements that may be required by other regulatory agencies or governmental entities that have jurisdiction.
- C. Building permits on single lots.
1. All lots, **whether or not in platted subdivisions, which are in the sensitive lands overlay area**, or otherwise meet the criteria defined herein, shall be submitted with a site specific geotechnical report in accordance with Chapter 18 of the International Building Code (IBC) and engineered constructions plans which have been designed in compliance with the recommendations made within the geotechnical report for site excavation, grading, slope stability, structural components, landscaping, orete any other geologic hazard mitigation specified.
 2. **The building permit may be issued administratively after it is determined that the lot can be developed in accordance with the intent of this chapter.**
 3. The Building Official may require the geotechnical firm to observe the excavation of the site and submit verification of soil conditions and suitability of the site for construction.
 4. **If the only hazard associated with the site is high liquefaction, then the applicant must submit a soils report with recommendations for control of subsurface water as well as footing and foundation design.**

Comment [S25]: Variation on section 10-12-6(2 & 3) of the adopted code. Highlighted areas existing text

10-12-050: MINIMUM QUALIFICATIONS OF THE GEOLOGIST:

Engineering geology and the evaluation of geologic hazards is a specialized discipline within the practice of geology requiring technical expertise and knowledge of techniques not commonly used in other geologic investigations. Therefore, geologic hazard investigations involving engineering geologic studies shall only be accepted by The City of North Salt Lake when conducted and signed by a qualified engineering geologist. The minimum qualifications of the engineering geologist who performs geologic hazard investigations are:

- A. An undergraduate or graduate degree in geology, engineering geology, or geological engineering, or closely related field, from an accredited college or university;
- B. Five (5) full years of experience in a responsible position in the field of engineering geology in Utah, or in a state with similar geologic hazards and regulatory environment. This experience must

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demonstrate the engineering geologist's knowledge and application of appropriate techniques in performing geologic hazard studies; and

- C. A Utah state professional geologist's license.

10-12-060: MINIMUM QUALIFICATIONS OF THE ENGINEER:

Evaluation and mitigation of geologic hazards often require contributions from a qualified geotechnical engineer, particularly in the design of mitigation measures. Geotechnical engineering is a specialized discipline within the practice of civil engineering requiring technical expertise and knowledge of techniques not commonly used in civil engineering investigations. Therefore, geologic hazard investigations requiring contributions from a qualified geotechnical engineer will only be accepted by The City of North Salt Lake when also signed and sealed by a qualified geotechnical engineer. Minimum qualifications of the geotechnical engineer who participates in geologic hazard investigations are:

- A. A graduate degree in civil engineering, with an emphasis in geotechnical engineering; or a B.S. degree in civil engineering with twelve (12) semester hours of post B.S. credit in geotechnical engineering, or course content related to evaluation of geologic hazards, from an accredited college or university;
- B. Five (5) full years of experience in a responsible position in the field of geotechnical engineering in Utah, or in a state with similar geologic hazards and regulatory environment, and experience demonstrating the engineer's knowledge and application of appropriate techniques in participating in geologic hazard studies; and
- C. A Utah state professional engineer's license.

10-12-070: PRELIMINARY ACTIVITIES:

- A. This section shall apply to any geologic hazard investigation for the purpose of determining the feasibility of development or for the purpose of exploring, evaluating or establishing locations for permanent improvements.
- B. Scoping Meeting: The developer or consultant shall schedule a scoping meeting with the city to evaluate the engineering geologist/geotechnical engineer's investigative approach. At this meeting, the consultant shall present a work plan that includes locations of anticipated geologic hazards and locations of proposed exploratory excavations, such as trenches, borings, and CPT soundings, which meet the minimum standard of practice. The investigation approach should allow for flexibility due to unexpected site conditions. Field findings may require modifications to the work plan. Upon completion of a successful scoping meeting, a geologic hazard investigation permit application may be submitted to the City of North Salt Lake.
- C. Geologic Hazard Investigation Permit: As required by this chapter of this code and except as otherwise noted therein, no person shall commence or perform any land disturbance, grading,

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relocation of earth, or any other land disturbance activity, without first obtaining a geologic hazard investigation permit. Application for a said permit shall be filed with the city engineer on forms furnished by the city for such purposes only after a scoping meeting has taken place.

- D. The applicant shall specify a primary contact responsible for coordination with the city during the land disturbance activity.

10-12-080: GEOLOGIC HAZARD INVESTIGATION PERMIT:

- A. Application for a geologic hazard investigation permit shall be filed with the city engineer on forms furnished by the city for such purpose. Applications shall include all the plans, specifications, reports, documentation and information required herein. Three (3) sets of all required plans, specifications and reports shall be submitted with each application. All such plans, specifications and reports shall be prepared and signed by a civil engineer, or other professionally qualified individual, where applicable. Additional experts in applicable fields should be utilized for preparation of such documents and reports as appropriate. No application shall be processed until all required plans, specifications, reports, documentation and information have been received by the city in accordance with the provisions and requirements of this title.
- B. Plans and Specifications: Each application shall include a detailed site plan including the following:
1. A vicinity map;
 2. The property lines and dimensions and bearings;
 3. The location of any existing buildings or structures on the property or within fifty feet (50') of the property boundary;
 4. Existing vegetation;
 5. Accurate topography, including a minimum of one hundred feet (100') outside project boundary;
 6. The elevations, dimensions, locations, extent, and slopes of all proposed land disturbance activities shown by contours or other means;
 7. Locations of proposed test pits, bores, trenches, or other excavations;
 8. Known or probable locations of geologic hazards;
 9. The estimated starting and completion dates for the proposed land disturbance activities and proposed land disturbance activities schedule and permit term;
 10. Temporary construction entrance and exit plan;
 11. Signed, written authorization from the property owner giving the applicant permission to access the property and perform the proposed land disturbance;
 12. Any additional plans, drawings, or calculations required by the city engineer;
 13. Grading plan for the proposed land disturbance activity and site;
 14. Drainage plan for the proposed land disturbance activity and site;
 15. Erosion and sediment control plan for the proposed land disturbance activity and site; and
 16. Revegetation plan for the proposed land disturbance activity and site.

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- C. Fees: All applicable fees shall be paid by applicant with the filing of an application for a permit in accordance with the consolidated fee schedule. An application will not be deemed complete until the required fees have been received by the city.

- D. Conditions of Approval: In granting any permit pursuant to the provisions of this title, the city engineer or his or her authorized representative may attach such conditions as may be reasonably necessary to protect public health and safety. Such conditions may include, but will not be limited to:
 - 1. The improvement of any existing site condition to bring it up to the standards of this title;
 - 2. Requirements for fencing excavations or fills which would otherwise be hazardous;
 - 3. Duration of permit; and
 - 4. Posting of a performance bond for the completion of the work proposed in the geologic hazards investigation application, including, but not limited to, the proposed remediation and/or restoration of the site.

- E. Denial of Geologic Hazard Investigation Permits:
 - 1. A geologic hazard investigation permit shall not be issued in any case where it is found that the work proposed by the applicant is hazardous, as determined by the city engineer, or is likely to endanger any private property, result in the deposit of debris on any public way, or interfere with any existing drainage course;
 - 2. A geologic hazard investigation permit shall not be issued if the proposed land disturbance activity would not comply with the requirements of an applicable site plan, subdivision plat, or any provisions of law, including the provisions of this title.

- F. Approved Plans: The applicant shall retain the approved set of plans and specifications at the site covered by the geologic hazard investigation permit at all times during which the work authorized thereby is in progress. No approved plans or specifications shall be changed, modified, altered or amended, without approval of the city engineer.

- G. Emergencies: The provisions of this title shall not apply to any land disturbance activity which is conducted during a period of emergency or disaster, as declared and defined by the city, and which is directly connected with or related to the relief of conditions caused by such emergency or disaster.

10-12-090: GEOLOGIC HAZARD STUDIES AND REPORTS REQUIRED:

Any applicant requesting development approval on a parcel of land within a geologic hazard study area or where there are known or readily apparent geologic hazards and the area is not depicted on the geologic hazards study area maps, shall submit to the city five (5) paper copies and one electronic copy of a site specific geologic hazard study report.

10-12-100: GEOLOGIC HAZARD REPORTS:

- A. Each geologic hazards report shall be site specific and shall identify all known or suspected potential geologic hazards, originating on site or off site, whether previously identified or previously unrecognized, that may affect the subject property. All geologic hazards reports shall include the original or wet signature and professional seal, both in blue ink, of the qualified professional. Geologic hazards reports coprepared by professional geologists and engineers must include both professionals' original signature and seal in blue ink.
- B. Surface fault rupture reports shall contain all requirements as described in section 10-12-330-1, "Appendix A, Minimum Standards For Surface Fault Rupture Studies", of this chapter. Surface fault rupture studies shall be prepared by a qualified engineering geologist.
- C. Slope stability and landslide reports shall contain all requirements as described in section 10-12-330-2, "Appendix B, Minimum Standards For Slope Stability Analysis", of this chapter. Slope stability and landslide studies shall be prepared by a qualified engineering geologist and a qualified geotechnical engineer.
- E. Liquefaction reports shall contain all requirements as described in section 10-12-330-3, "Appendix C, Minimum Standards For Liquefaction Investigations", of this chapter. Liquefaction analyses shall be prepared by a qualified geotechnical engineer. Liquefaction investigations are not required for residential construction classified in the international residential code as R-3.
- F. All geologic hazards reports shall include, at a minimum:
 - 1. A one to twenty four thousand (1:24,000) scale geologic map, with references, showing the general surface geology (landslides, alluvial fans, etc.), bedrock geology where exposed, bedding attitudes, faults, and other geologic structural features;
 - 2. A detailed site map of the subject area, at a scale equal to or more detailed than one inch equals two hundred feet (1" = 200'), showing the locations of subsurface investigations and site specific geologic mapping performed as part of the geologic investigation, including boundaries and features related to any geologic hazards, topography, and drainage. The site map must show the location and boundaries of the property, geologic hazards, delineation of any recommended setback distances from hazards, and recommended locations for structures. Buildable and nonbuildable areas shall be clearly identified;
 - 3. Trench logs, when applicable, prepared in the field and presented in the geologic hazard report at a scale equal to or more detailed than one inch equals five feet (1" = 5');
 - 4. Boring logs when applicable, prepared with standard geologic nomenclature;
 - 5. Listing of aerial photographs used and other supporting information, as applicable;

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6. Conclusions, clearly supported by adequate data included in the report, that summarize the characteristics of the geologic hazards, and that address the potential effects of the geologic conditions and geologic hazards on the proposed development and occupants thereof, particularly in terms of risk and potential damage;
 7. Specific recommendations for additional or more detailed studies, as may be required to understand or quantify a geologic hazard;
 8. An evaluation of whether or not mitigation measures are required, including an evaluation of multiple mitigation options;
 9. Specific recommendations for avoidance or mitigation of the effects of the hazards, consistent with the purposes set forth in section 10-12-010 of this chapter, including design or performance criteria for engineered mitigation measures and all supporting calculations, analyses, modeling or other methods, and assumptions. Final design plans and specifications for engineered mitigation must be signed and stamped by a qualified geotechnical, civil and/or structural engineer, as appropriate;
 10. Data upon which recommendations and conclusions are based, shall be clearly stated in the report; and
 11. A statement shall be provided regarding the suitability of the proposed development from a geologic hazard perspective.
- G. When a submitted report does not contain adequate data to support its findings, additional or more detailed studies shall be required to explain or quantify a particular geologic hazard or to describe how mitigation measures recommended in the report are appropriate and adequate.

10-12-110: REVIEW OF GEOLOGIC HAZARD REPORTS:

- A. The city shall review any proposed land use which requires preparation of a geologic hazards report under this chapter to determine the possible risks to the safety of persons, property and city infrastructure from geologic hazards.
- B. Prior to consideration of any request for preliminary plat approval or site plan approval, the geologic hazards report, if required, shall be submitted to the city for review.
- C. All direct costs associated with the review of geologic hazard studies shall be paid by the applicant.
- D. The city shall determine whether the report complies with all of the following standards:
 1. A suitable geologic hazard report has been prepared by qualified professionals.
 2. The proposed land use does not present an unreasonable risk to the health, safety, and welfare of persons or property, including buildings, storm drains, public streets, culinary water facilities, utilities or critical facilities, whether off site or on site, or to the aesthetics and natural functions

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of the landscape, such as slopes, streams or other waterways, drainage, or wildlife habitat, whether off site or on site, because of the presence of geologic hazards or because of modifications to the site due to the proposed land use.

3. The proposed land use demonstrates that, consistent with the state of the practice, the identified geologic hazards can be mitigated to a level where the risk to human life and damage to property are reduced to an acceptable and reasonable level in a manner which will not violate applicable federal, state, or local statutes, ordinances or regulations. Mitigation measures should consider, in their design, the intended aesthetic functions of other governing ordinances such as the sensitive lands overlay zone. The applicant must include with the geologic hazards report a mitigation plan that defines how the identified hazards or limitations will be addressed without impacting or adversely affecting off site areas. Mitigation measures must be reasonable and practical to implement especially if such measures require ongoing maintenance by property owners.
- E. The city may set other requirements as are necessary to overcome any geologic hazards and to ensure that the purposes of this chapter are met. These requirements may include, but are not limited to:
1. Additional or more detailed studies to understand or quantify the hazard or determine whether mitigation measures recommended in the report are adequate;
 2. Specific mitigation requirements; establishing buildable and nonbuildable areas; limitations on slope grading and controls on grading, or revegetation;
 3. Grading plans, when required, shall be prepared, signed and sealed by a licensed professional engineer. As built grading plans, when required, shall be signed and sealed by the project geotechnical engineer as well as the professional engineer that prepared the grading plans. Grading plans, when required, shall include, at a minimum, the following:
 - a. Maps of existing and proposed contours;
 - b. Present and proposed slopes for each graded area;
 - c. Existing and proposed drainage patterns;
 - d. Location and depth of all proposed cuts and fills;
 - e. Description of methods to be employed to achieve stabilization and compaction;
 - f. Location and capacities of proposed drainage, structures, and erosion control measures based on maximum runoff for a 100-year storm;
 - g. Location of existing buildings or structures on or within one hundred feet (100') of the site, or which may be affected by proposed grading and construction; and

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- h. Plan for monitoring and documentation of testing, field inspections during grading, and reporting to the city.
 - 4. Installation of monitoring equipment and seasonal monitoring of surface and subsurface geologic conditions, including groundwater levels; and
 - 5. Other requirements such as time schedules for completion of the mitigation and phasing of development.
- F. The City of North Salt Lake may also set requirements necessary to protect the health, safety, and welfare of the citizens, protect city infrastructure and financial health, and minimize potential adverse effects of geologic hazards to public health, safety, and property as a condition of approval of any development which requires a geologic hazards report.
- G. The City of North Salt Lake may require a qualified professional to be on site, at the cost of the developer, during certain phases of construction, particularly during grading phases and the construction of retaining walls. For any real property where development has proceeded on the basis of a geologic or geotechnical report which has been accepted by the city, no final inspection shall be completed, performance bond released or building permits issued until the geotechnical engineer or engineering geologist who signed and approved the report certifies, in writing, that the completed improvements conform to the descriptions and requirements contained in said report.
- H. An applicant may appeal any decision made under the provisions of this chapter only after the city has issued a written review of a report. The appeal shall be submitted in writing to the city recorder within ten (10) days of the issuance of the written review or other decision and shall set forth the specific grounds or issues upon which the appeal is based. The city shall assemble a professional panel of three (3) qualified experts to serve as the appeal authority for any technical dispute. The panel shall consist of an expert designated by the city, an expert designated by the applicant, and an expert chosen by the city's and the applicant's designated experts. If the city's and the applicant's designated experts cannot reach a consensus of the third expert within thirty (30) days, the city shall select the third expert. Decisions of the panel will be binding and will be based on the majority decision of the panel. The costs of the appeal process shall be paid by the applicant.

10-12-120: LAND DISTURBANCE PERMIT REGULATIONS

As part of the final plat approval and in addition to other subdivision regulations, final construction plans shall be designed according to the following land disturbance regulations in section 10-12-140 to 10-12-330. After a final plat has been approved, the approved final constructions plans along with any associated documents and bonding shall constitute a land disturbance permit.

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10-12-130: COMPLIANCE WITH PERMIT:

The land disturbance permit holder and contractor and their agents shall carry out the proposed land disturbance activities in accordance with the approved plans and specifications, the conditions of the land disturbance permit, and the requirements of this title and all other applicable ordinances, rules, regulations and standards of the city.

10-12-140: PROTECTIVE DEVICES:

The land disturbance permit holder and contractor and their agents shall maintain all required protective devices and temporary drainage during the progress of the land disturbance activities and shall be responsible for the observance of the hours of work, dust control, methods of hauling, and other applicable regulations.

10-12-150: MAINTENANCE OF SITE:

The land disturbance permit holder and contractor and their agents shall be responsible for the maintenance of the site and the removal of all debris during the term of the permit.

10-12-160: ACCESS AND HAUL ROUTES:

Temporary construction entrance and exit routes shall be provided by the permit holder in accordance with the approved plans and permit at key access points to the site or project to eliminate the problem of tracking mud and debris from the construction site onto private or public streets. The city engineer may impose conditions to the land disturbance permit with respect to access or haul routes to and from land disturbance activity sites, the hours of work, methods of controlling dust, and safety precautions involving pedestrian or vehicular traffic as determined required in the interest of the public health, safety and welfare.

10-12-170: CONSENT OF ADJACENT PROPERTY OWNERS:

Whenever any land disturbance activity requires entry onto adjacent property for any reason, the land disturbance permit applicant shall obtain the written consent of the adjacent property owner or their authorized representative and shall file a copy of such consent with the city engineer before a land disturbance permit may be issued.

10-12-180: CUTS AND FILLS:

- A. Height: Except as otherwise provided herein, no finished fill slope shall exceed a vertical height of twenty five feet (25'). The city engineer may approve a fill slope in excess of twenty five feet (25') as deemed appropriate in his or her sole discretion based upon the circumstances and conditions of the proposed site and fill. Any fill slope proposed in excess of twenty five feet (25') shall be supported by documentation and a report prepared and signed by a professional engineering geologist and soils engineer attesting to the appropriateness, safety and stability of the proposed fill slope. Such documentation and report shall be prepared at the applicant's expense and shall

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address the need for and design of intervening terraces or other necessary measures to provide for the safety and stability of the proposed slope.

- B. Slope: Except as otherwise provided herein, no cut or fill shall exceed a slope of two horizontal to one vertical (2:1). The city engineer may approve a cut or fill slope in excess of two horizontal to one vertical (2:1) as deemed appropriate in his or her sole discretion based upon the circumstances and conditions of the proposed site and the cut or fill. Any cut or fill slope proposed in excess of two horizontal to one vertical (2:1) shall be supported by documentation and a report prepared and signed by a professional engineering geologist and soils engineer attesting to the appropriateness, safety and stability of the proposed cut or fill slope. Such documentation and report shall be prepared at the applicant's expense and shall address the need for and design of necessary measures to provide for the safety and stability of the proposed cut or fill slope.
- C. Unstable Material: The city engineer may require any cut or fill to be constructed with an exposed surface flatter than two horizontal to one vertical (2:1) when, in the city engineer's opinion, under the particular conditions, such flatter surface is deemed necessary for stability or safety.
- D. Fill Slope Limits: Toes of fill slopes shall not be made nearer to a property boundary line than one-half ($\frac{1}{2}$) of the height of the fill, or twenty feet (20'), whichever is less. Fill slopes shall not be divided horizontally by property lines. Fill slopes occurring on a side or rear lot line shall be made a part of the downhill lot.

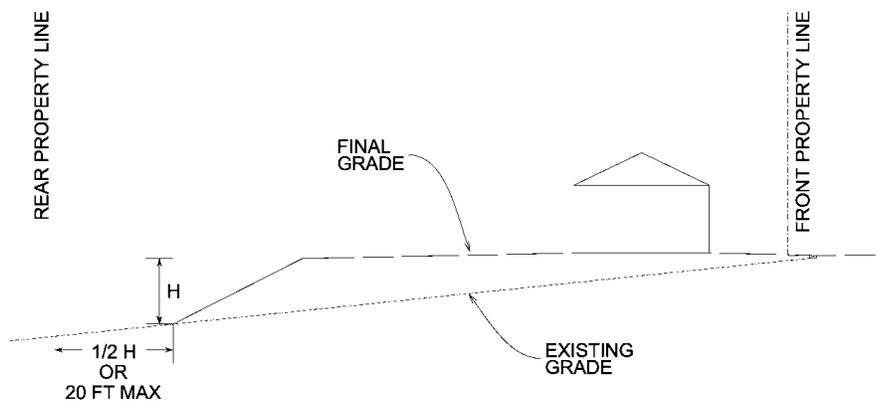
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- E. Intervening Terraces: When intervening terraces are used on slopes two horizontal to one vertical (2:1), terraces shall be finished using materials as approved by the city and shall have a minimum width of six feet (6'). Terraces shall be extensively landscaped in accordance with an approved landscaping plan. Terraces shall be spaced at vertical intervals of twenty five feet (25'); provided, however, for slopes less than forty feet (40') in vertical height, terraces shall be approximately at mid height. For slopes flatter than two horizontal to one vertical (2:1), where soil conditions require, intervening terraces may also be required.
- F. Compaction: All fills shall be placed, compacted, inspected, and tested in accordance with the provisions of this title and any other city construction standards. If the strict enforcement of the compaction provisions of this section is determined by the city engineer to be unnecessary because of the proposed or probable use of the land, the city engineer may waive the requirements. The requirements of this section shall not be waived when structures are to be supported by the fill, the

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fills are being placed in areas to be designated as hillside, or where the fills are necessary as a safety measure to aid in preventing the saturation, settling, slipping, or erosion of the fill.

- G. Fills Toeing Out On Natural Slopes: Except as otherwise provided herein, no fills toeing out on natural slopes which are steeper than two horizontal to one vertical (2:1) shall be permitted. The city engineer may approve such fills toeing out on natural slopes which are steeper than two horizontal to one vertical (2:1) as deemed appropriate in his or her sole discretion based upon the circumstances and conditions of the proposed site and fill. Any fill slope proposed to toe out on natural slopes which are steeper than two horizontal to one vertical (2:1) shall be supported by documentation and a report prepared and signed by a professional engineering geologist and soils engineer attesting to the appropriateness, safety and stability of the proposed fill. Such documentation and report shall be prepared at the applicant's expense and shall address the need for and design of necessary measures to provide for the safety and stability of the proposed fill.
- H. Combined Cut And Fill Slopes: Combined cut and fill slopes shall meet the requirements of this section insofar as steepness, height, and benching are concerned except that, where the slope exceeds twenty five feet (25') in height, the required drainage bench shall be placed at the top of the cut slope.
- I. Setback: Fill placed on or above the top of an existing or proposed cut or natural slope steeper than three horizontal to one vertical (3:1) shall be set back from the top of the slope a minimum distance as required by the uniform building code, as adopted by the city, or as approved by the city engineer based upon submitted reports and documentation for the project.



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- J. Existing Fills: All existing manmade fills on any and all sites shall be properly evaluated by a soils engineer. If deficiencies exist, recommendations and design criteria for corrective measures shall be included within the soils engineering report.
- K. Measure of Settlement: The city engineer or the building official may require the determination of the settlement characteristics of any fills to establish that any movements have substantially ceased. In such cases, a system of bench marks shall be installed by a civil engineer or land surveyor at critical points on the fill, and accurate measurements of both horizontal and vertical movements shall be taken and evaluated by the soils engineer for a period of time sufficient to define the settlement behavior. The evaluation period shall be monitored in accordance with the approved geotechnical report for the project.
- L. Buttress Fills: All buttress fills shall be designed in accordance with the city's construction standards and the recommendations and design criteria, including the subdrain system, submitted by the soils engineer or engineering geologist with the approval of the city engineer.

10-12-190: EROSION CONTROL AND DRAINAGE DEVICES:

Best Management Practices, such as, but not limited to, intervening terraces, diverter terraces, vee channels, runoff computations, drainage dispersal walls, subdrains and site drainage, are to be provided and designed as indicated in the land disturbance design and construction standards.

10-12-200: AREAS SUBJECT TO SLIDES AND UNSTABLE SOIL:

A detailed evaluation shall be completed for all areas subject to slides or unstable soils by a soils engineer and/or engineering geologist including design criteria for corrective measures. Exploratory work and/or reports are required for such conditions in accordance with geologic hazard investigation permit requirements set forth in Section 10-12-080.

10-12-210: PLANTING AND IRRIGATION OF CUT AND FILL SLOPES:

All manufactured cut and fill slopes shall be planted and maintained until established. Temporary irrigation may be required in accordance with the provisions of this title and the land disturbance design and construction standards. The developer is responsible for operating and maintaining the irrigation system until such time as the planted material is well established as determined by the city engineer.

10-12-220: LOT STANDARDS AND IDENTIFICATION OF BUILDING ENVELOPE:

In order to facilitate the preservation of slopes, natural terrain and vegetation, or avoidance of geologic hazards, the minimum depth of a lot in feet, as regulated in this title may be modified by the City Council upon recommendation by the Planning Commission. The minimum depth may be reduced to no less than ninety (90) feet and must meet the setback standards of the underlying zone. The resulting area must contain a buildable area as defined by Section 10-1-44 of this code.

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The developer shall indicate on the site plan and subdivision plat for the site or project, the maximum building envelope, or area of ultimate land/vegetation disturbance, including designation of the building envelope's distance from the lot or site boundary lines, which will be caused by the proposed structure and its appurtenances. Prior to the beginning of any type of land disturbance or construction on a given lot, the contractor performing the work is responsible for identifying the building envelope in the field by marking of the building envelope perimeter. The building official may require markers to be surveyed when deemed necessary or appropriate. Marking of the building envelope shall be inspected by the city's building division prior to commencement of any land disturbance activity on the lot.

10-12-230: PROPERTY LINE AND CORNER MARKERS:

The developer shall ensure that property lines and corner survey markers are installed for the site or project. These markers are to include rebar placed at the back corners of each lot and markers placed on the curb for locating the side property lines. If curb and gutter do not exist, the front markers are to be placed in the road pavement. Additional survey markers may be required on property lines as deemed necessary by the building official.

10-12-240: SLOPE PROTECTION EASEMENTS:

The developer shall provide slope protection easements for all critical slopes (native or constructed) as part of the project. Critical slopes shall include slopes which average thirty (30%) percent or higher for an elevation change five (5) feet or greater. The City Engineer may declare other slopes less than thirty (30%) percent as critical slopes due to geologic hazard, soil stability, drainage flows, vegetation conditions, designated open space, etc. Slope protection easements shall be provided either through indicating them on the final plat or by separate recordable easement if deemed necessary by the city. Where building lots abut slope protection easements, the developer shall fence the property line as part of the required improvements prior to issuance of building permits.

10-12-250: MASTER DRAINAGE PLAN REQUIRED:

A master drainage plan shall be designed for all proposed development. At a minimum the plan shall address the following items:

A. Master Drainage Plan Design

1. Applications for development shall include a design level plan indicating how proposed lots will be graded and drained. This plan shall be of sufficient detail to demonstrate how surface runoff will be managed on all lots within the proposed project, including location of swales and detention facilities that will be utilized to control runoff.
2. A notice of drainage easements shall be recorded on the subdivision plat for the project. The easement shall specify that nothing may be placed within a swale easement that would diminish or reduce functionality of the swale.
3. Swales: Swales located in rear and side yards shall be designed with materials approved by the city that will prevent erosion, and shall become a permanent feature of the lot. Such swale systems shall be shown in a drainage easement on the site plan and final plat for the project.

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4. **Underground Facilities:** The developer may select the option of designing underground drainage facilities to replace aboveground drainage swales if these facilities meet certain city requirements. These requirements include the design being approved by the city engineer department, inclusion of these facilities within city approved drainage easements, maintenance of the system by a homeowners' association, and other requirements as may be deemed necessary by the city.
 5. **Lots Graded Toward Street for Drainage:** Except as otherwise provided herein, stormwater runoff from individual lots shall be directed toward the streets at a minimum slope of two (2%) percent. Exceptions may be granted by the city engineer, when deemed appropriate and necessary, in accordance with the provisions of this section. Aesthetic reasons such as the creation of view lots shall not constitute sufficient reason for granting an exception.
 6. **Lots Which Cannot Be Graded Toward the Street: Approval Required:** Lots that cannot be drained toward the street, may be allowed to drain a portion of their stormwater runoff toward the rear of the yard, after review and approval by the city engineer. Prior to obtaining this approval, the developer shall prepare a drainage plan, which indicates how the stormwater will be disposed of from the lot, to either a city owned storm drain, a natural stream or channel, a manmade channel, a lower elevation lot or other city approved facility or retained on site. Such disposal is to be protected by a drainage easement, as described in 10-12-270, dedicated for this purpose and the facilities are to be bonded for. Drainage easements shall be maintained by the Home Owner's Association, where applicable, or by individual lot owners.
In the case where stormwater flow is allowed to flow from a higher lot to a lower lot, in elevation, sufficient energy dissipation shall be designed and constructed to reduce the water velocity to an acceptable level to prevent erosion. The design and construction of these energy dissipation structures shall be approved by the engineering department in conjunction with the review and approval of the drainage plan for the project.
- B. **Conformance to Master Drainage Plan**
1. Individual applications for building permits shall include lot-specific drainage plans which indicate how surface runoff will be managed in conformance with the master drainage plan. Modifications to the design specified in the master drainage plan shall require approval by the city engineer.
 2. Installation of required lot drainage improvements shall be completed and approved prior to issuance of a certificate of occupancy.
 3. Individual lot owners shall be responsible for the maintenance of all lot drainage improvements. Nothing may be placed within drainage easements that would diminish or reduce functionality of the drainage system.
 4. **Notice:** The developer shall notify the homebuilders and homeowners of the required lot drainage improvements and the homeowner's obligation to maintain such improvements in perpetuity. The method of notice shall be approved by the city.

10-12-260: LANDSCAPING OF CERTAIN LOTS FOR EROSION CONTROL:

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The city reserves the right to require that the lots be revegetated or stabilized upon completion of subdivision improvements or that lots be fully landscaped prior to the issuance of a certificate of occupancy, as part of the requirements of the project. The purpose of this requirement is to ensure that, for certain areas in the city which have soils susceptible to severe erosion, erosion is controlled. The criteria to be used by the city are the size of the lot and sizes of adjacent lots, elevation differences between lots, level of disturbance to native soils and vegetation, the type of soils in the project, and any other relevant factors.

10-12-270: EROSION CONTROL AND REVEGETATION:

The developer is to indicate erosion control and revegetation Best Management Practice (BMP) to be used for the project on the project drawings and as part of the project descriptions included with the application. Erosion and sedimentation control measures will be inspected prior to commencement of construction, during construction of the subdivision, and once the subdivision construction is complete. The engineering department will be responsible for these inspections. Once the subdivision level construction is complete and improvement work begins on individual lots, erosion and sedimentation control BMP will be inspected prior to any lot disturbance, during construction and once lot level construction is complete.

10-12-280: WET WEATHER PLAN:

The city engineer may require that land disturbance activities and erosion control or revegetation plans be modified, if unforeseen delays occur due to weather generated problems not considered at the time the land disturbance permit was issued, including submission and approval of a wet weather plan.

10-12-290: DISCLOSURE WHEN A GEOLOGIC HAZARD REPORT IS REQUIRED:

- A. Whenever a geologic hazards report is required under this chapter, the owner of the parcel shall record a notice running with the land in a form satisfactory to The City of North Salt Lake prior to the approval of any development or subdivision of such parcel. Disclosure shall include signing a disclosure and acknowledgment form provided by the city, which includes:
1. Notice that the parcel is located within a geologic hazards study area as shown on the geologic hazards study area map or as otherwise defined in this chapter; and
 2. Notice that a geologic hazards report was prepared and is available for public inspection in the city's files.
- B. Where geologic hazards and related setbacks are delineated in a subdivision, the owner shall also place additional notification on the plat stating the above information, prior to final approval of the plat.

10-12-300: WARNING AND DISCLAIMER:

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The geologic hazards ordinance and sensitive lands overlay area map may be amended as new information becomes available pursuant to procedures set forth in this title. The provisions of this chapter do not in any way assure or imply that areas outside the sensitive lands overlay maps boundary are free from the possible adverse effects of geologic hazards. It is the responsibility of the applicant's geotechnical consultants to employ outside research and data to discover and establish the locations and boundaries of any known and potential geologic hazards. This chapter shall not create any liability on the part of The City of North Salt Lake, or any officer, reviewer, or employee thereof for any damages from geologic hazards that result from reliance on this chapter or any administrative requirement or decision lawfully made hereunder.

10-12-310: CHANGE OF USE:

No change in use which results in the conversion of a building or structure from one not used for human occupancy to one that is so used shall be permitted unless the building or structure complies with the provisions of this chapter.

10-12-320: CONFLICTING REGULATIONS:

In cases of conflict between the provisions of existing zoning classifications, building code, subdivision ordinance, or any other ordinance of The City of North Salt Lake and the geologic hazards ordinance codified in this chapter, the most restrictive provision shall apply.

10-12-330: APPENDICES:**10-12-330-1: APPENDIX A, MINIMUM STANDARDS FOR SURFACE FAULT RUPTURE HAZARD STUDIES:****1.0 INTRODUCTION**

The Wasatch Fault Zone (WFZ) is a major tectonic feature in the western United States, extending for about 230 miles from near Fayette, Utah at the south to near Malad, Idaho at the north. Surface faulting has occurred along the WFZ in northern Utah throughout late Pleistocene and Holocene time (Lund, 1990; Black and others, 2003). "*Surface faulting*" is fault-related offset or displacement of the ground surface that may occur in an earthquake.

The WFZ consists of a series of normal-slip fault segments with relative movement down to the west and up to the east. Ten major fault segments are recognized along the WFZ (Machette and others, 1992), which are believed to be independent in regard to their potential for surface faulting. These segments have distinct geomorphic expression and are clearly visible on aerial photographs.

If a fault were to break the ground surface beneath a building, significant damage could occur, perhaps resulting in injuries or loss of life. To ensure that buildings are not sited across Holocene-age (active) faults, the City of North Salt Lake Municipal Code, Title 10, Chapter 12: Sensitive Area & Geologic Hazards Ordinance requires a site-specific geologic investigation of property situated within the

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Sensitive Lands Overlay Zone and any other areas that may be subject to the presence of fault lines. The primary purposes of the geologic investigation are to assess the surface fault rupture potential of the property and to assess the suitability of the property for the proposed development from the standpoint of surface fault rupture. If a fault is discovered and determined (or presumed) to be Holocene-age (i.e., "active"), appropriate building setbacks from the fault are required such that structures are not located astride the fault trace. Building setbacks must be established prior to development of sites located within the Surface-Fault-Rupture Special Study Area.

A site-specific surface-fault-rupture-hazard study includes a field investigation (usually involving the excavation and geologic documentation of a trench) and report. This appendix describes the minimum standards required by the City for surface-fault-rupture-hazard studies.

The purpose of establishing minimum standards for surface fault rupture hazard studies is to:

- (a) Protect the health, safety, welfare, and property of the public by minimizing the potentially adverse effects of surface fault rupture and related hazards;
- (b) Assist property owners and land developers in conducting reasonable and adequate studies;
- (c) Provide consulting engineering geologists with a common basis for preparing proposals, conducting investigations, and recommending setbacks; and,
- (d) Provide an objective framework for review of fault study report.

The procedures outlined herein are intended to provide the developer and consulting engineering geologist with an outline of appropriate exploration methods, standardized report information, and expectations of the City.

These standards constitute the minimum level of effort required in conducting surface-fault-rupture-hazard special studies in the City. Considering the complexity of evaluating surface and near-surface faults, additional effort beyond the minimum standards may be required at some sites to adequately address the fault hazard. The information presented herein does not relieve the engineering geologist from his/her duty to perform additional geologic or engineering services he/she believes are necessary to assess the fault rupture potential at a site.

1.2 Properties Requiring a Fault Investigation

A fault study is required, prior to approval of any land use for properties identified in 10-12-030. Submittal and review of a site-specific fault study prior to receiving a land use or building permit from the City is required for said areas. It is the responsibility of the applicant to retain a qualified engineering geologist to perform the fault study.

In addition, a fault investigation may be required if on site or nearby fault-related features are identified during the course of other geologic or geotechnical studies performed on or near the site or during construction.

2.0 MINIMUM STANDARDS FOR FAULT STUDIES

Following are the minimum standards for a comprehensive fault investigation. Fault investigations may be reported in conjunction with other geological and geotechnical investigations, or may be submitted separately.

2.1 Scoping Meeting

The developer's consultant must schedule a scoping meeting with the City to evaluate the fault investigation approach. At this meeting, the consultant should present a site plan that includes: proposed building locations (if known); expected fault location(s) and orientation; and the proposed trench locations, orientation, length, and depth (see section 2.3, Fault Investigation Method). The investigative approach should allow for flexibility due to unexpected site conditions; field findings may require modifications to the work plan.

2.2 Fault Investigation Method

Inherent in fault study methods is the assumption that future faulting will recur along pre-existing faults and in a manner consistent with past displacement. The focus of fault investigations is therefore to accurately locate existing faults. If faults are documented, the investigation shall also 1) evaluate the age of movement along the fault trace(s), and 2) estimate amounts of past displacement, which is required in order to derive fault setbacks.

2.2.1 Previous Studies and Aerial Photograph Review

A fault investigation shall include review of available literature pertinent to the site and vicinity, including previous published and unpublished geologic/soils reports, and interpretation of available stereo-paired aerial photographs. The photographs reviewed should include more than one set and should include pre-urbanization aerial photographs, if available. Efforts must be made to accurately plot the locations of mapped or inferred fault traces on the property as shown by previous studies in the area.

2.2.2 Exploration Methods

Subsurface exploration consisting of trenching is required. The engineering geologist shall clean and document ("log") trench exposures as described in section 2.3.5. Existing faults may also be identified and mapped in the field by direct observation of young, fault-related geomorphic features, and by examination of aerial photographs. When trenching is not feasible (i.e., the presence of shallow ground water, excessive thickness of fill, etc.), supplemental methods such as closely spaced Cone Penetration Test (CPT) soundings may be employed. Such supplemental methods must be discussed with the City prior to implementation and should be clearly described in the report.

In lieu of conventional trenching or the CPT method, an alternative subsurface exploration program may be acceptable, depending upon site conditions. Such a program may consist of a sufficient number of closely spaced downhole-logged bucket-auger borings, geophysical exploration techniques, or a combination of techniques.

When an alternative exploration program is proposed, a written description of the proposed exploration program along with an exploration plan should be submitted to the City for review, prior to the exploration. The plan must include, at a minimum, a map of suitable scale showing the site limits, surface geologic conditions within several thousand feet of the site boundary, the location and type of the proposed alternative subsurface exploration, and the anticipated earth materials present at depth on the site.

The actual subsurface exploration program to be used on any specific parcel will be determined on an individual basis, considering the current state of technical knowledge about the fault zone and information gained from previous exploration on adjacent or nearby parcels. At all times, consideration must be given to safety, and trenching should comply with all applicable safety regulations.

2.2.3 Trench Siting

Exploratory trenches must be oriented approximately perpendicular to the anticipated trend of known fault traces. The trenches shall provide the minimum footage of trenching necessary to explore the portion of the property situated in the surface-fault-rupture special study area, such that the potential for surface fault rupture may be adequately assessed. When trenching to determine if faults might affect a proposed building site, the trench should extend beyond the building footprint at least the minimum setback distance for the building type (see Table A-1).

Comment [S26]: This is on page 12-34

Test pits or potholes alone are neither adequate nor acceptable. In some instances more than one trench may be required to cover the entire building area, particularly if the proposed development involves more than one building. Where feasible, trenches shall be located outside the proposed building footprint, as the trench is generally backfilled without compaction, which could lead to differential settlement beneath the footings. Supplemental trenching may be required in order to: 1) further refine fault locations (or the absence thereof); 2) accurately define building restriction areas, and/or; 3) provide additional exposures for evaluating the age of movement along fault traces.

2.2.4 Location Determination

All trenches and fault locations must be surveyed by a registered professional land surveyor. Fault locations should be surveyed with an accuracy of about 0.1 foot or better, so that structural setbacks can be developed.

2.2.5 Depth of Excavation

The depth of the trenches will ultimately depend on the trench location, occurrence of ground water, stability of subsurface deposits, and the geologic age of the subsurface geologic units. As a minimum, however, trenches shall extend substantially below the A and B soil horizons and well into distinctly bedded Pleistocene-age materials, if possible. Where possible, the trenches should extend below Holocene deposits and should expose contacts between Holocene materials and the underlying older materials.

Appropriate safety measures pertaining to trench safety for ingress, egress, and working in or in the vicinity of the trench must be implemented and maintained. It is the responsibility of the person in the field directing trench excavation to ensure that fault trenches are excavated in compliance with current Occupational Safety and Health Administration excavation safety regulations.

Trench backfilling methods and procedures should be documented in order to establish whether additional corrective excavation, backfilling, and compaction should be performed at the time of site grading.

In cases where Holocene (i.e., active) faults may be present, but pre-Holocene deposits are below the practical limit of excavation, the trenches must extend at least through sediments that are clearly older than several fault recurrence intervals. The practical limitations of the trenching must be acknowledged in the report and recommendations must reflect resulting uncertainties.

2.2.6 Documenting Trench Exposures

Trench walls shall be cleaned of debris and backhoe smear prior to documentation. Trench logs shall be carefully drawn in the field at a minimum scale of 1-inch equals 5-feet (1:60) following standard and accepted fault trench investigation practices. Vertical and horizontal control must be used and shown on trench logs. Trench logs must document all significant geologic information from the trench and should graphically represent the geologic units observed; see section 2.6.3(E). The strike, dip, and net vertical displacement (or minimum displacement) of faults must be noted.

2.2.7 Age Dating

The engineering geologist shall interpret the ages of geologic units exposed in the trench. When necessary, radiocarbon or other age determinations methods shall be used. If evidence of faulting is documented, efforts shall be made to date the time of latest movement (to determine whether recent (Holocene) displacement has occurred) using appropriate geologic and/or soil stratigraphic dating techniques. When necessary, obtain radiocarbon or other age determinations. If soil stratigraphic dating techniques are used, a geologist experienced in using the techniques and soil-development rates in the area should perform them.

Many of the surficial deposits within Salt Lake Valley Area were deposited during the last pluvial lake cycle, referred to as the Bonneville lake cycle. Although late-stage Bonneville lake cycle sediments do not correspond to the Pleistocene-Holocene boundary (i.e., Bonneville lake cycle deposits are older than

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10,000 years old), for purposes of evaluating fault activity, these deposits provide a useful regional datum (particularly so when the entire Holocene sequence of sediments is not present).

For practical purposes, and due to documented Holocene displacement along the Salt Lake segment of the Wasatch fault, any fault which displaces late-stage Bonneville Lake Cycle deposits should be considered active unless the Bonneville deposits are overlain by clearly unfaulted early Holocene-age deposits. Conversely, the presence of demonstrably unbroken, undeformed, and stratigraphically continuous Bonneville sediments constitutes reasonable geologic evidence for the absence of active faulting.

2.3 Field Review

A field review by the City is required during exploratory trenching. The applicant must provide a minimum of 48-hours notice to schedule the field review with the City. The trenches should be open, safe, cleaned, and a preliminary log completed at the time of the review. The field review allows the City to evaluate the subsurface data (i.e., age and type of sediments; presence/absence of faulting, etc.) with the consultant. Discussions about questionable features or an appropriate setback distance are encouraged, but the City will not help log the trench, explain the stratigraphy, or give verbal approval of the proposed development during the field review.

2.4 Recommendations for Fault Setbacks

To address wide discrepancies in fault setback recommendations, the City has adopted the fault setback calculation methodology for normal faults of Batatian and Nelson (1999) and Christenson and others (2003). The consultant should use this method to establish the recommended fault setback for critical facilities and structures designed for human occupancy. If another fault setback method is used, the consultant must provide justification in the report for the method used. Faults and fault setbacks must be clearly identified on site plans and maps.

Minimum setbacks are based on the type and occupancy of the proposed structures (see Table A-1). A setback should be calculated using the formulas presented below, and then compared to the minimum setback established in Table A-1. The greater of the two shall be used as the setback. Minimum setbacks apply to both the hanging wall and footwall blocks.

Top of slope and/or toe of slope setbacks required by the local Building Code must also be considered; again, the greater setback must be used.

Downthrown Fault Block (Hanging Wall)

The fault setback for the downthrown block will be calculated using the following formula: $S = U (2D + F/\tan.)$ where:

| | | |
|---|---|---|
| S | = | Setback within which structures for human occupancy are not permitted; |
| U | = | Criticality Factor, based on the proposed occupancy of the structure (see Table A-1) |
| D | = | Expected fault displacement per event (assumed to be equal to the net vertical displacement measured for each past event) |
| F | = | Maximum depth of footing or subgrade portion of the building |
| . | = | Dip of the fault (degrees) |

Uprhrown Fault Block (Footwall)

The dip of the fault and depth of the subgrade portion of the structure are irrelevant in calculating the setback on the upthrown fault block. Therefore, the setback for the upthrown side of the fault will be calculated as:

$$S = U \times 2D$$

The setback is measured from the portion of the building closest to the fault, whether subgrade or above grade. Minimum setbacks apply as discussed above.

2.5 Small Displacement Faults

Small-displacement faults are not categorically exempt from setback requirements. Some faults having less than 4 inches (100 mm) of displacement ("small displacement faults") may be exempt from setback requirements.

Specific structural risk-reduction options such as foundation reinforcement may be acceptable for some small-displacement faults in lieu of setbacks. Structural options must minimize structural damage.

Fault studies must still identify faults and fault displacements (both net vertical displacements and horizontal extension across the fault or fault zone), and consider the possibility that future displacement amounts may exceed past amounts. If structural risk-reduction measures are proposed for small displacement faults, the following criteria must be addressed:

- (a) Reasonable geologic data indicating that future surface displacement along the particular fault will not exceed 4 inches.
- (b) Specific structural mitigation to minimize structural damage.

(c) A structural engineer must provide appropriate designs and the City shall review the designs.

2.6 Required Outline for Surface Fault Rupture Hazard Studies

The information described herein may be presented as a separate surface-fault-rupture-potential report or it may be incorporated within other geology or engineering reports that may be required for the property.

The report shall contain a conclusion regarding the potential risk of surface fault rupture on the subject property and a statement addressing the suitability of the proposed development from a surface-fault-rupture-hazard perspective. If exploration determines that there is a potential for surface rupture due to faulting, or if gradational contacts or other uncertainties associated with the exploration methods preclude the determination of absence of small fault offsets, the report should provide estimates of the amplitude of fault offsets that might affect habitable structures.

Surface-fault-rupture-hazard reports submitted to the City are expected to follow the outline and address the subjects presented below. However, variations in site conditions may require that additional items be addressed, or permit some of the subjects to be omitted (except as noted).

2.6.1. Report

(a) Purpose and scope of work: The report shall contain a clear and concise statement of the purpose of the investigation and the scope of work performed for the investigation.

(b) Geologic and tectonic setting: The report shall contain a clear and concise statement of the general geologic and tectonic setting of the site vicinity. The section should include a discussion of active faults in the area, paleoseismicity of the relevant fault system(s), and should reference relevant published and unpublished geologic literature.

(c) Site description and conditions: The report shall include information on geologic units, graded and filled areas, vegetation, existing structures, and other factors that may affect site development, choice of investigative methods, and the interpretation of data.

(d) Methods of investigation:

(1) Review of published and unpublished maps, literature and records concerning geologic units, faults, surface and ground water, and other factors.

(2) Stereoscopic interpretation of aerial photographs to detect fault-related topography, vegetation or soil contrasts, and other lineaments of possible fault origin. Reference the photograph source, date, flightline numbers, and scale.

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(3) Observations of surface features, both on-site and off site, including mapping of geologic and soil units; geomorphic features such as scarps, springs, and seeps (aligned or not); faceted spurs, offset ridges or drainages; and geologic structures. Locations and relative ages of other possible earthquake-induced features such as sand blows, lateral spreads, liquefaction, and ground settlement should be mapped and described. Slope failures, although they may not be conclusively tied to earthquake causes, should also be noted.

(4) Subsurface investigations: The report shall include a description of the program of subsurface exploration, including trench logs, purpose of trench locations, and a summary of trenching or other detailed, direct observation of continuously exposed geologic units, soils, and geologic structures. All trench logs shall be at a scale of at least 1-inch equals five-feet.

The report must describe the criteria used to evaluate the ages of the deposits encountered in the trench, and clearly evaluate the presence or absence of active (Holocene) faulting.

(e)Conclusions: Conclusions must be supported by adequate data and shall contain, at a minimum:

(1) Summary of data upon which conclusions are based.

(2) Location of active faults, including orientation and geometry of faults, amount of net slip along faults, anticipated future offset, and delineation of setback areas.

(3) Degree of confidence in and limitations of data and conclusions.

(f)Recommendations: Recommendations must be supported by adequate geologic data and appropriate reasoning behind each statement. Minimum recommendations shall include:

(1) Recommended setback distances per section 2.5. Supporting calculations must be included. Faults and setbacks must be shown on site maps and final recorded plat maps.

(2) Other recommended building restrictions or use limitations (i.e., placement of detached garages, swimming pools, or other non-habitable structures).

(3) Need for additional or future studies to confirm buildings are not sited across active faults, such as inspection of building footing or foundation excavations by the consultant.

2.6.2. Report References

Reports must include citations of literature and records used in the study, referenced aerial photographs or images interpreted (air-photo source, date and flight number, scale), and any other sources of data and information, including well logs, personal communications, etc.

2.6.3. Illustrations:

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At a minimum, reports must include the following illustrations:

(a) Location Map: A site location map depicting topographic and geographic features and other pertinent data. Generally a 1:24,000-scale USGS topographic base map will suffice.

(b) Geologic Map: A regional-scale map (1:24,000 to 1:50,000 scale) is generally adequate. Depending on site complexity, a site-scale geologic map (1 inch = 200 ft or more detailed) may also be necessary. The map should show Quaternary and bedrock geologic units, faults, seeps or springs, soil or bedrock slumps, and other geologic and soil features existing on and adjacent to the project site. Geologic cross-sections may be included as needed to illustrate 3-dimensional relationships.

(c) Site Plan: A detailed site plan is required. The site plan should be at a scale of at least 1 inch = 200 feet (or more detailed) and should clearly show site boundaries, proposed building footprints, existing structures, streets, slopes, drainages, exploratory trenches, boreholes, test pits, geophysical traverses, and any other pertinent data.

(d) Site Specific Fault Map: If faulting is documented at a parcel, the report shall include a site-specific fault map. The fault map should be at a scale of at least 1 inch = 200 feet and should clearly show the surveyed locations of trenches (and any other exploratory techniques), surveyed location(s) of faults documented in the trenches, inferred location of the faults between trenches, recommended fault setback distance on each side of the faults, topographic contours, and proposed building locations, if known.

(e) Exploratory Trench Logs: Trench logs are required for each trench excavated as part of the study. Trench logs shall accurately depict all observed geologic features and conditions. Trench logs shall not be generalized or diagrammatic. The minimum scale is 1 inch = 5 feet (1:60) with no vertical exaggeration. Trench logs must accurately reflect the features observed in the trench (see section 2.3.6).

Trench logs shall include: trench orientation and indication of which trench wall was logged; trench top and bottom; stratigraphic contacts; stratigraphic unit descriptions including lithology, USCS soil classification, genesis (geologic origin), age, and contact descriptions; soil (pedogenic) horizons; marker beds; and deformation or offset of sediments, faults, and fissures. Other features of tectonic significance such as buried scarp free-faces, colluvial wedges, in-filled soil cracks, drag folds, rotated clasts, lineations, and liquefaction features including dikes, sand blows, etc. should also be shown. Interpretations of the age and origin of the deposits and any faulting or deformation must be included, based on depositional sequence. Fault orientation and geometry (strike and dip), and amount of net displacement must be measured and noted.

(f) Exploratory boreholes and CPT soundings: Should boreholes or CPT soundings be utilized as part of the investigation, reports shall include the logs of the borings/soundings. Borehole logs must include lithology descriptions, interpretations of geologic origin, USCS soil classification or other standardized engineering soil classification (include an explanation of the classification scheme), sample intervals,

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penetrative resistance values, static ground-water depths and dates measured, total depth of borehole, and identity of the person logging the borehole. Electronic copies of CPT data files should be provided to the City's reviewer, upon request.

(g) Geophysical data: All geophysical data, showing stratigraphic interpretations and fault locations, must be included in the report, along with correlations to trench or borehole logs to confirm interpretations.

(h) Photographs: Photographs of scarps, trench walls, or other features that enhance understanding of site conditions and fault-related conditions are not required but should be included when deemed appropriate. Composited, rectified digital photographs of trench walls may be used as background for trench logs, but features as outlined in section F above must still be delineated.

TABLE A-1
SETBACK RECOMMENDATIONS AND
CRITICALITY FACTORS (U) FOR IBC OCCUPANCY CLASSES
(International Code Council, 2003)

| Class (IBC) | Occupancy Group | Criticality | U | Minimum Setback |
|--------------------|-----------------------------|--------------------|----------|------------------------|
| A | Assembly | 2 | 2.0 | 25 feet |
| B | Business | 2 | 2.0 | 20 feet |
| E | Educational | 1 | 3.0 | 50 feet |
| F | Factory/Industrial | 2 | 2.0 | 20 feet |
| H | High hazard | 1 | 3.0 | 50 feet |
| I | Institutional | 1 | 3.0 | 50 feet |
| M | Mercantile | 2 | 2.0 | 20 feet |
| R | Residential (R-1, R-2, R-4) | 2 | 2.0 | 20 feet |

| | | | | |
|-----|---|---|-----|---------|
| R-3 | Residential (R-3, includes single family homes) | 3 | 1.5 | 15 feet |
| S | Storage | - | 1 | 0 |
| U | Utility and misc. | - | 1 | 0 |
| | Table A-2 | 1 | 3.0 | 50 feet |

TABLE A-2
 ADDITIONAL STRUCTURES REQUIRING GEOLOGIC INVESTIGATION

Buildings and other structures that represent a substantial hazard to human life in the event of failure, but not limited to:

1. Buildings and other structures where more than 300 people congregate in one area.
2. Buildings and other structures with elementary school, secondary school or day care facilities with occupancy greater than 250.
3. Buildings and other structures with occupancy greater than 500 for colleges or adult education facilities.
4. Health care facilities with occupancy greater than 50 or more resident patients but not having surgery or emergency treatment facilities.
5. Jails and detention facilities.
6. Any other occupancy with occupancy greater than 1000.
7. Power generating stations, water treatment or storage for potable water, waste water treatment facilities and other public utility facilities.
8. Buildings and other structures containing sufficient quantities of toxic or explosive substances to be dangerous to the public if released.

Buildings and other structures designed as essential facilities including, but not limited to:

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1. Hospitals and other care facilities having surgery or emergency treatment facilities.
2. Fire, rescue and police stations and emergency vehicle garages and fueling facilities.
3. Designated emergency shelters.
4. Designated emergency preparedness, communications, and operation centers and other facilities required for emergency response.
5. Power-generating stations and other public utility facilities required as emergency backup facilities for facilities and structures included in this table.
6. Structures containing highly toxic materials as defined by the most recently adopted version of the IBC where the quantity of the material exceeds the maximum allowable quantities defined by the most recently adopted version of the IBC.
7. Aviation control towers, air traffic centers and emergency aircraft hangars.
8. Buildings and other structures having critical national defense functions.
9. Water treatment and storage facilities required to maintain water pressure for fire suppression.

10-12-330-2: APPENDIX B, MINIMUM STANDARDS FOR SLOPE STABILITY ANALYSIS:**1.0 INTRODUCTION**

The procedures outlined herein are intended to provide consultants with a general outline for performing quantitative slope stability analyses and to clarify the expectations of The City of North Salt Lake. These standards constitute the minimum level of effort required in conducting quantitative slope stability analyses in The City of North Salt Lake. Considering the complexity inherent in performing slope stability analyses, additional effort beyond the minimum standards presented herein may be required at some sites to adequately address slope stability. The information presented herein does not relieve consultants of their duty to perform additional geologic or engineering analyses they believe are necessary to assess the stability of slopes at a site.

The evaluation of landslides generally requires quantitative slope stability analyses. Therefore, the standards presented herein are directly applicable to landslide investigation, and also constitute the minimum level of effort when performing landslide investigations.

The purposes for establishing minimum standards for slope stability analyses are to:

- (a) Protect the health, safety, welfare, and property of the public by minimizing the potentially adverse effects of unstable slopes and related hazards;
- (b) Assist property owners and land developers in conducting reasonable and adequate studies;
- (c) Provide consulting engineering geologists and geotechnical engineers with a common basis for preparing proposals, conducting investigations, and mitigation; and,
- (d) Provide an objective framework for regulatory review of slope stability reports.

1.2 Areas Requiring Slope Stability Analyses

Slope stability analyses shall be performed for all sites located within the Sensitive Lands Overlay Zone and for all slopes that may be affected by the proposed development which meet the following criteria:

- (a) Cut and/or fill slopes steeper than about 2 horizontal (h) to 1 vertical (v).
- (b) Natural slopes steeper than or equal to 3 horizontal (h) to 1 vertical (v).
- (c) Natural and cut slopes with potentially adverse geologic conditions (e.g., bedding, foliation, or other structural features that are potentially adverse to the stability of the slope).
- (d) Natural and cut slopes which include a geologic hazard such as a landslide, irrespective of the slope height or slope gradient.

(e) Buttresses and stability fills.

(f) Cut, fill, or natural slopes of water-retention basins or flood-control channels.

(g) In hillside areas, investigations shall address the potential for surficial instability, debris/mudflows, rock falls, and soil creep on all slopes that may affect the proposed development or be affected by the proposed development.

(h) When evaluating site conditions to determine the need for slope stability analyses, off-property conditions shall be considered (both up-slope to the top(s) of adjacent ascending slopes and down-slope to and beyond the toe(s) of adjacent descending slopes). Also, the consultant shall demonstrate that the proposed hillside development will not affect adjacent sites or limit adjacent property owners' ability to develop their sites.

1.3 Roles of Engineering Geologist and Engineering

The investigation of the static and seismic stability of slopes is an interdisciplinary practice. To provide greater assurance that the hazards are properly identified, assessed, and mitigated, involvement of both an engineering geologist and geotechnical engineer is required. Analyses shall be performed only by or under the direct supervision of licensed professionals, qualified and competent in their respective area of practice. An engineering geologist shall provide appropriate input to the geotechnical engineer with respect to the potential impact of the geology, stratigraphy, and hydrologic conditions on the stability of the slope. The shear strength and other geotechnical earth material properties shall be evaluated by the geotechnical engineer. Qualified engineering geologists, geological engineers and geotechnical engineers may assess and quantitatively evaluate slope stability. However, the geotechnical engineer shall perform all design stability calculations. Ground motion parameters for use in seismic stability analysis may be provided by either the engineering geologist or geotechnical engineer.

1.4 Minimum Qualifications of the Licensed Professional

Slope stability analyses must be performed by qualified engineering geologists and qualified geotechnical engineers (see sections 10-12-050 and 10-12-060 of the City of North Salt Lake Municipal Code, Title 10, Chapter 12: Sensitive Area District & Geologic Hazards Ordinance).

2.0 GENERAL REQUIREMENTS

Except for the derivation of the input ground motion for pseudostatic and seismic deformation analyses (see section 12), slope stability analyses and evaluations should be performed in general accordance with the latest version of Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Landslide Hazards in California (Blake et al., 2002). Procedures for developing input ground motions to be used in The City of North Salt Lake are described

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in section 12.1. See the City of North Salt Lake Municipal Code, Title 10, Chapter 12: Sensitive Area District & Geologic Hazards Ordinance, for supplemental requirements.

3.0 SUBMITTALS

Submittals for review shall include boring logs; geologic cross sections; trench and test pit logs; laboratory data (particularly shear strength test results, including individual stress-deformation plots from direct shear tests); discussions pertaining to how idealized subsurface conditions and shear strength parameters used for analyses were developed; analytical results, including computer output files (if requested); and summaries of the slope stability analyses and conclusions regarding slope stability.

Subsurface geologic and groundwater conditions must be illustrated on geologic cross sections and must be utilized by the geotechnical engineer for the slope stability analyses. If on-site sewage or storm water disposal exists or is proposed, the slope stability analyses shall include the effects of the effluent plume on slope stability.

The results of any slope stability analyses must be submitted with pertinent backup documentation (i.e., calculations, computer output, etc.). Printouts of input data, output data (if requested), and graphical plots must be submitted for each computer-aided slope stability analysis. In addition, input data files, recorded on diskettes, CDs, or other electronic media may be requested to facilitate the City's review.

4.0 FACTORS OF SAFETY

The minimum acceptable static factor of safety is 1.5 for both gross and surficial slope stability. The minimum acceptable factor of safety for a calibrated pseudostatic analysis is 1.0 using the method of Stewart and others (2003) (see section 12.2).

5.0 LANDSLIDES

The evaluation of landslides generally requires quantitative slope stability analyses. Therefore, the standards presented herein are directly applicable to landslide investigation, and also constitute the minimum level of effort when performing landslide investigations. Evaluation of landslides shall be performed in the preliminary phase of hillside developments. Where landslides are present or suspected, sufficient subsurface exploration will be required to determine the basic geometry and stability of the landslide mass and the required stabilization measures. The depth of geologic exploration shall consider the regional geologic structure, the likely failure mode of the suspected failure, and past geomorphic conditions.

6.0 SITE INVESTIGATION AND GEOLOGIC STUDIES

Adequate evaluation of slope stability for a given site requires thorough and comprehensive geologic and geotechnical engineering studies. These studies are a crucial component in the evaluation of slope stability. Geologic mapping and subsurface exploration are normal parts of field investigation. Samples

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of earth materials are routinely obtained during subsurface exploration for geotechnical testing in the laboratory to determine the shear strength parameters and other pertinent engineering properties.

In general, geologic studies for slope stability consist of the following fundamental phases:

- (a) Study and review of published and unpublished geologic information (both regional and site specific).
- (b) Review and interpretation of available stereoscopic and oblique aerial photographs, DEMs, and LiDAR.
- (c) Geologic field mapping, including, but not necessarily limited to, measurement of bedding, foliation, fracture, and fault attitudes and other parameters.
- (d) Documentation and evaluation of subsurface groundwater conditions (including effects of seasonal and longer-term natural fluctuations as well as landscape irrigation), surface water, on-site sewage disposal, and/or storm water disposal.
- (e) Subsurface exploration.
- (f) Analysis of the geologic failure mechanisms that could occur at the site (e.g., mode of failure and construction of the critical geologic cross sections).
- (g) Presentation and analysis of the data, including an evaluation of the potential impact of geologic conditions on the project.

Geologic/geotechnical reports shall demonstrate that each of these phases has been adequately performed and that the information obtained has been considered and logically evaluated. Minimum criteria for the performance of each phase are described and discussed in Blake and others (2002).

7.0 SUBSURFACE EXPLORATION

The purpose of subsurface exploration is to identify potentially significant geologic materials and structures at a site and to provide samples for detailed laboratory characterization of materials from potentially critical zones. Subsurface exploration is almost always required and may be performed by a number of widely known techniques such as bucket-auger borings, conventional small-diameter borings, cone penetration testing (CPT), test pits, trenches, and/or geophysical techniques (see section 4.2 of Blake et al., 2002). A discussion of the applicability of some subsurface exploration techniques follows.

7.1 Trenching

Subsurface exploration consisting of trenching has proven, in some cases, to be necessary when uncertainty exists regarding whether or not a particular landform is a landslide. Care must be exercised with this exploration method because landslides characteristically contain relatively large blocks of

intact geologic units, which in a trench exposure could give the false impression that the geologic unit is "in-place." Although limited to a depth of about 15 feet below existing grades, trenching has also proven to be a useful technique for verifying margins of landslides, although the geometry of a landslide can generally be readily determined from evaluation of stereoscopic aerial photographs. Once a landslide is identified, conventional subsurface exploration drilling techniques will be required (see section 7.2 and 7.3). Slope stability analyses based solely on data obtained from trenches will not be accepted.

7.2 Methods for Bedded Formations

Conventional subsurface exploration techniques involving continuous core drilling with an oriented core barrel, test pits, and deep bucket-auger borings may be used to assess the subsurface soil and geologic conditions, particularly for geologic units with inclined bedding that includes weak layers.

Although not commonly utilized in Utah, a 24-inch-diameter bucket-auger-boring with down-hole logging can provide valuable data (provided the consultant has determined the drill hole is safe to enter). The evaluation of safety of the proposed subsurface exploration program will be the responsibility of the consultant.

Particular attention must be paid to the presence or absence of weak layers (e.g., clay, claystone, silt, shale, or siltstone units) during the exploration. Unless adequately demonstrated (through comprehensive and detailed subsurface exploration) that weak (clay, claystone, silt, shale, or siltstone) layers (even as thin as $\frac{1}{16}$ -inch or less) are not present, a weak layer shall be assumed to possibly occur anywhere in the stratigraphic profile (i.e., ubiquitous weak clay beds).

The depth of the subsurface exploration must be sufficient to assess the conditions at or below the level of the deepest potential failure surface possessing a factor of 1.5 or less. A preliminary slope stability analysis may need to be performed to assist in the planning of the subsurface exploration program.

7.3 Other Geologic Units

For alluvium, fill materials, or other soil units that do not contain weak interbeds, other exploration methods such as small-diameter borings (e.g., rotary wash or hollow-stem-auger) or cone penetration testing may be suitable.

8.0 SOIL PARAMETERS

Soil properties, including unit weight and shear strength parameters (cohesion and friction angle), may be based on conventional field and laboratory tests as well as on field performance. Where appropriate (i.e., for landslide slip surfaces, along bedding planes, for surficial stability analyses, etc.), laboratory tests for saturated, residual shear strengths must be performed. Estimation of the shear resistance along bedding (or landslide) planes normally requires an evaluation of saturated residual along-bedding-strength values of the weakest interbedded (or slide-plane) material encountered during the subsurface exploration, or in the absence of sufficient exploration, the weakest material that may be present,

consistent with site geologic conditions. Strength parameters derived solely from CPT data may not be appropriate for slope-stability analysis in some cases, particularly for strengths along existing slip surfaces where residual strengths have developed. Additional guidance on the selection of strength parameters for slope stability analyses is contained in Blake et al. (2002).

8.1 Residual Shear Strength Parameters

Residual strength parameters may be determined using the direct shear or ring shear testing apparatus; however ring shear tests are preferred. If performed properly, direct shear test results may approach ring-shear test results. The soil specimen must be subjected to a sufficient amount of deformation (e.g., a significant number of shearing cycles in the direct shear test or a significant amount of rotation in the ring shear test) to assure that residual strength has been developed. In the direct-shear and ring-shear tests, stress-deformation curves can be used to determine when a sufficient number of cycles of shearing have been performed by showing that no further significant drop in shear strength results with the addition of more cycles or more rotation. The stress-deformation curves obtained during the shear tests must be submitted with the other laboratory test results. It shall be recognized that for most clayey soils, the residual shear strength envelope is curved and passes through the origin (i.e., at zero normal stress there is zero shear strength). Any "apparent shear strength" increases resulting from a non-horizontal shear surface (i.e., ramping) or "bulldozing" in residual direct shear tests shall be discounted in the interpretation of the strength parameters.

8.2 Interpretation

The engineer will need to use considerable judgment in the selection of appropriate shear test methods and in the interpretation of the results to develop shear strength parameters commensurate with slope stability conditions to be evaluated. Scatter plots of shear strength data may need to be presented to allow for assessment of idealized parameters. The report shall summarize shear strength parameters used for slope stability analyses and describe the methodology used to interpret test results and estimate those parameters.

Peak shear strengths may be used to represent across-bedding failure surfaces or compacted fill, in situations where strength degradations are not expected to occur (see guidelines in Blake et al., 2002). Where peak strengths cannot be relied upon, fully softened (or lower) strengths shall be used.

Ultimate shear strength parameters shall be used in static slope stability analyses when there has not been past deformation. Residual shear strength parameters shall be used in static slope stability analyses when there has been past deformation.

Averaged strength parameters may be appropriate for some across-bedding conditions, if sufficient representative samples have been carefully tested. Analyses for along-bedding or along-existing-landslide slip surfaces shall be based on lower-bound interpretations of residual shear strength parameters and comparison of those results to correlations, such as those of Stark and others (2005).

8.3 Default Soil Parameters

Failure surfaces for known landslides commonly occur within the Tertiary volcanics. Those failure surfaces typically are along clay layers formed by the in situ alteration of tuff deposits. In cases when the failure surface has been sampled and tested, relatively low residual-shear-strength values have been obtained; these values are cohesion equal to 0 psf and a friction angles equal to 11 to 12 degrees. Similar values have been reported from the Springhill landslide in North Salt Lake that is in a similar tuffaceous volcanic formation of Tertiary age.

To assist in understanding shear strengths of these materials, the following shear strength parameters for landslide failure surfaces and along weak layers within the Tertiary volcanics shall be used; cohesion equal to 0 psf and a friction angle equal to 11 degrees, unless otherwise demonstrated. If site-specific testing produces lower residual shear strength than these values, the site-specific test results should be used. If site-specific testing produces higher values, documentation must be provided to demonstrate that the weakest materials were retrieved and tested and that the materials retrieved truly represent the basal landslide slip surface.

9.0 SOIL CREEP

The potential effects of soil creep shall be addressed where any proposed structure is planned in close proximity to an existing fill slope or natural slope. The potential effects on the proposed development shall be evaluated and mitigation measures proposed, including appropriate setback recommendations. Setback recommendations shall consider the potential affects of creep forces.

All reports in hillside areas shall address the potential for surficial instability , and soil creep on all slopes that may affect the proposed development or be affected by the proposed development. Stability of slopes along access roads shall be addressed.

10.0 GROSS STATIC STABILITY

Gross stability includes rotational and translational deep-seated failures of slopes or portions of slopes existing within or outside of but potentially affecting the proposed development. The following guidelines, in addition to those in the Blake and others (2002) document, shall be followed when evaluating slope stability:

(a) Stability shall be analyzed along cross sections depicting the most adverse conditions (e.g., highest slope, most adverse bedding planes, shallowest likely ground water table, and steepest slope). Often analyses are required for different conditions and for more than one cross section to demonstrate which condition is most adverse. When evaluating the stability of an existing landslide, analyses must also address the potential for partial reactivation. Inclinometers may be used to help determine critical failure surfaces and, along with high-resolution GPS, the state of activity of existing landslides. The critical failure surfaces on each cross-section shall be identified, evaluated, and plotted on the large-scale cross section. (b) If the long-term, static factor of safety is less than 1.5, mitigation measures will

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be required to bring the factor of safety up to the required level or the project may be redesigned to achieve a minimum factor of safety of 1.5.

(c) The temporary stability of excavations shall be evaluated and mitigation measures shall be recommended as necessary to obtain a minimum factor of safety of 1.3.

(d) Long-term stability shall be analyzed using the highest known or anticipated groundwater level based upon a groundwater assessment performed under the requirements of section 6.0.

(e) Where back-calculation is appropriate, shear strengths utilized for design shall be no higher than the lowest strength computed using back calculation. If a consultant proposes to use shear strengths higher than the lowest back-calculated value, justification shall be required. Assumptions used in back-calculations regarding pre-sliding topography and groundwater conditions at failure must be discussed and justified.

(f) Reports shall describe how the shear strength testing methods used are appropriate in modeling field conditions and long-term performance of the subject slope. The utilized design shear strength values shall be justified with laboratory test data and geologic descriptions and history, along with past performance history, if known, of similar materials.

(g) Reports shall include shear strength test plots consisting of normal stress versus shear resistance (failure envelope). Plots of shear resistance versus displacement shall be provided for all residual and fully softened (ultimate) shear tests.

(h) The degree of saturation for all test specimens shall be reported. Direct shear tests on partially saturated samples may grossly overestimate the cohesion that can be mobilized when the material becomes saturated in the field. This potential shall be considered when selecting shear strength parameters. If the rate of shear displacement exceeds 0.005 inches per minute, the consultant shall provide data to demonstrate that the rate is sufficiently slow for drained conditions.

(i) Shear strength values higher than those obtained through site-specific laboratory tests generally will not be accepted.

(j) If direct shear or triaxial shear testing is not appropriate to model the strength of highly jointed and fractured rock masses, the design strengths shall be evaluated in a manner that considers overall rock mass quality and be consistent with rock mechanics practice.

(k) Shear strengths used in slope stability analyses shall be evaluated considering the natural variability of engineering characteristics inherent in earth materials. Multiple shear tests on each site material are likely to be required.

(l) Direct shear tests do not always provide realistic strength values (Watry and Lade, 2000). Correlations between liquid limit, percent clay fraction, and strength (fully softened and residual) with published data (e.g., Stark and McCone, 2002) shall be performed to verify tested shear strength parameters. Strength values used in analyses that exceed those obtained by the correlation must be appropriately justified.

(m) Shear strengths for proposed fill slopes shall be evaluated using samples mixed and remolded to represent anticipated field conditions. Confirming strength testing may be required during grading.

(n) Where bedding planes are laterally unsupported on slopes, potential failures along the unsupported bedding planes shall be analyzed. Similarly, stability analyses shall be performed where bedding planes form a dip-slope or near-dip-slope using composite potential failure surfaces that consist of potential slip surfaces along bedding planes in the upper portions of the slope in combination with slip surfaces across bedding planes in the lower portions of the slope.

(o) The stability analysis shall include the effect of expected maximum moisture conditions on soil unit weight.

(p) For effective stress analyses, measured groundwater conditions adjusted to consider likely unfavorable conditions with respect to anticipated future groundwater levels, seepage, or pore pressure shall be included in the slope stability analyses.

(q) Tension crack development shall be considered in the analyses of potential failure surfaces. The height and location of the tension crack shall be determined by searching.

(r) Anticipated surcharge loads as well as external boundary pressures from water shall be included in the slope stability evaluations, as deemed appropriate.

(s) Analytical chart solutions may be used provided they were developed for conditions similar to those being analyzed. Generally though, computer-aided searching techniques shall be used, so that the potential failure surface with the lowest factor of safety can be located. Examples of typical searching techniques are illustrated on figures 9.1a through 9.1f in Blake and others (2002). However, verification of the reasonableness of the analytical results is the responsibility of the geotechnical engineer and/or engineering geologist.

(t) The critical potential failure surface used in the analysis may be composed of circles, wedges, planes, or other shapes considered to yield the minimum factor of safety most appropriate for the geologic site conditions. The critical potential failure surface having the lowest factor of safety with respect to shearing resistance must be sought. Both the lowest factor of safety and the critical failure surface shall be documented.

11.0 SURFICIAL STABILITY OF SLOPES

Surficial slope stability refers to slumping and sliding of near-surface sediments and is most critical during the snowmelt and rainy season or when excessive landscape water is applied. The assessment of surficial slope stability shall be based on analysis procedures for stability of an infinite slope with seepage parallel to the slope surface or an alternate failure mode that would produce the minimum factor of safety. The minimum acceptable depth of saturation for surficial stability evaluation shall be four feet.

11.1 Applicability and Procedures

Conclusions shall be substantiated with appropriate data and analyses. Residual shear strengths comparable to actual field conditions shall be used in completing surficial stability analyses. Surficial stability analyses shall be performed under rapid draw-down conditions where appropriate (e.g., for debris and detention basins).

Where 2:1 or steeper slopes have soil conditions that can result in the development of an infinite slope with parallel seepage, calculations shall be performed to demonstrate that the slope has a minimum static factor of safety of 1.5, assuming a fully saturated 4-foot thickness. If conditions will not allow the development of a slope with parallel seepage, surficial slope stability analyses may not be required (provided the geologic/geotechnical reviewer concurs).

Surficial slope stability analyses shall be performed for fill, cut, and natural slopes assuming an infinite slope with seepage parallel to the slope surface or other failure mode that would yield the minimum factor of safety against failure. A suggested procedure for evaluating surficial slope stability is presented in Blake et al. (2002).

11.2 Soil Properties

Soil properties used in surficial stability analyses shall be determined as noted in section 8.1. Residual shear strength parameters for surficial slope stability analyses shall be developed for a stress range that is consistent with the near-surface conditions being modeled. As indicated in section 8.1, it shall be recognized that for most clayey soils, the residual shear strength envelope is curved and passes through the origin (i.e., at zero normal stress there is zero shear strength). For sites with deep slip surfaces, the guidelines given by Blake and others (2002) should be followed.

11.3 Seepage Conditions

The minimum acceptable vertical depth for which seepage parallel to the slope shall be applied is four feet for cut or fill slopes. Greater depths may be necessary when analyzing natural slopes that have significant thicknesses of loose surficial material.

12.0 SEISMIC SLOPE STABILITY

In addition to static slope stability analyses, slopes shall be evaluated for seismic slope stability as well. Acceptable methods for evaluating seismic slope stability using calibrated pseudo-static limit-

equilibrium procedures and simplified methods (e.g., those based on Newmark, 1965) to estimate permanent seismic slope movements are summarized in Blake and others (2002).

Nonlinear, dynamic finite element/finite difference numerical methods also may be used to evaluate slope movements resulting from seismic events as long as the procedures, input data, and results are thoroughly documented, and deemed acceptable by the City.

12.1 Ground Motion for Pseudostatic and Seismic Deformation Analyses

In regards to design ground accelerations for seismic slope-stability analyses, The City of North Salt Lake prefers a probabilistic approach to determining the likelihood that different levels of ground motion will be exceeded at a particular site within a given time period. In order to more closely represent the seismic characteristics of the WFZ and better capture this possible high likelihood of a surface-faulting earthquake, design ground motion parameters for seismic slope stability analyses shall be based on the peak accelerations with a 3.5 percent probability in 50 years (1,400-year return period). Peak bedrock ground motions can be readily obtained via the internet from the United States Geological Survey (USGS) National Seismic Hazard Maps, Data and Documentation web page (USGS, 2002), which is based on Frankel and others (2002). PGAs obtained from the USGS (2002) web page should be adjusted for effects of soil/rock (site-class) conditions in accordance with Seed and others (2001). Site specific response analysis may also be used to develop PGA values as long as the procedures, input data, and results are thoroughly documented, and deemed acceptable by the City.

12.2 Pseudo-Static Evaluations

Pseudo-static methods for evaluating seismic slope stability are acceptable as long as minimum factors of safety are satisfied, and due consideration is given in the selection of the seismic coefficient, k_h , reduction in material shear strengths, and the factor of safety for pseudo-static conditions.

Pseudo-static seismic slope stability analyses can be performed using the "screening analysis" procedure described in Blake et al. (2002). For that procedure a k_h -value is selected from seismic source characteristics (modal magnitude, modal distance, and firm rock peak ground acceleration) and an acceptable level of deformation (5 cm) is specified. For that procedure, a factor of safety of 1.0 or greater is considered acceptable; otherwise, an analysis of permanent seismic slope deformation shall be performed.

12.3 Permanent Seismic Slope Deformation

For seismic slope stability analyses, estimates of permanent seismic displacement are preferred and may be performed using the procedures outlined in Blake and others (2002). It should be noted that Bray and Rathje (1998), referenced in Blake and others (2002), has been updated and superseded by Bray and Travararou (2007), which is the City's currently preferred method. For those analyses, calculated seismic

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displacements shall be 5 cm or less, or mitigation measures shall be proposed to limit calculated displacements to 5 cm or less.

For specific projects, different levels of tolerable displacement may be possible, but site-specific conditions, which shall include the following, must be considered:

(a) The extent to which the displacements are localized or broadly distributed - broadly distributed shear deformations would generally be less damaging and more displacement could be allowed.

(b) The displacement tolerance of the foundation system - stiff, well-reinforced foundations with lateral continuity of vertical support elements would be more resistant to damage (and hence could potentially tolerate larger displacements) than typical slabs-on-grade or foundation systems with individual spread footings.

(c) The potential of the foundation soils to experience strain softening - slopes composed of soils likely to experience strain softening should be designed for relatively low displacements if peak strengths are used in the evaluation of k_y due to the potential for progressive failure, which could involve very large displacements following strain softening.

In order to consider a threshold larger than 5 cm, the project consultant shall provide prior, acceptable justification to the City and obtain the City's approval. Such justification shall demonstrate, to the satisfaction of the City, that the proposed project will achieve acceptable performance⁴.

13.0 WATER RETENTION BASINS AND FLOOD CONTROL CHANNELS

For cut, fill, or natural slopes of water-retention basins or flood-control channels, slope stability analyses shall be performed. In addition to analyzing typical static and seismic slope stability, those analyses shall consider the effects of rapid drawdown, if such a condition could develop.

14.0 MITIGATION

When slope stability hazards are determined to exist on a project, measures to mitigate impacts from those hazards shall be implemented. Some guidance regarding mitigation measures is provided in Blake et al. (2002). Slope stability mitigation methods include 1) hazard avoidance, 2) grading to improve slope stability, 3) reinforcement of the slope or improvement of the soil within the slope, and (4) reinforcement of the structure built on the slope to tolerate anticipated slope displacements.

Where mitigation measures that are intended to add stabilizing forces to the slope are to be implemented, consideration may need to be given to strain compatibility. For example, if a compacted fill buttress is proposed to stabilize laterally unsupported bedding or a landslide, the amount of deformation needed to mobilize the recommended shear strength in the buttress shall be considered to confirm that it will not result in adverse movements of the upslope bedding or landslide deposits. Similarly, if a series of drilled soldier piers is to be used to support a potentially unstable slope and a

residential structure will be built on the piers, pier deformations resulting from movements needed to mobilize the soil's shear strength shall be compared to tolerable deflections in the supported structure.

14.1 Full Mitigation

Full mitigation of slope stability hazards shall be performed for developments in the City. Remedial measures that produce static factors of safety in excess of 1.5 and acceptable seismic displacement estimates shall be implemented as needed.

14.2 Partial Mitigation for Seismic Displacement Hazards

On some projects or portions thereof (such as small structural additions, residential "infill projects", non-habitable structures, and non-structural natural-slope areas), full mitigation of seismic slope displacements may not be possible, due to physical or economic constraints. In those cases, partial mitigation, to the extent that it prevents structural collapse, injury, and loss of life, may be possible if it can be provided consistent with IBC philosophies, and if it is approved by The City of North Salt Lake. The applicability of partial mitigations to specific projects will be evaluated on a case-by-case basis.

15.0 Notice of Geologic Hazard and Waiver of Liability

For developments where full mitigation of seismic slope displacements is not implemented, a Notice of Geologic Hazard shall be recorded with the proposed development describing the displacement hazard at issue and the partial mitigation employed. The Notice shall clearly state that the seismic displacement hazard at the site has been reduced by the partial mitigation, but not totally eliminated.

In addition, the owner shall assume all risks, waive all claims against the City and its consultants, and indemnify and hold the City and its consultants harmless from any and all claims arising from the partial mitigation of the seismic displacement hazard.

10-12-330-3: APPENDIX C, MINIMUM STANDARDS FOR LIQUEFACTION INVESTIGATIONS AND EVALUATIONS:

1.0 INTRODUCTION

The procedures outlined herein are intended to provide consultants with a general outline for performing liquefaction investigations and to specify the expectations of The City of North Salt Lake. These standards constitute the minimum level of effort required in conducting liquefaction investigations in The City of North Salt Lake. Considering the complexity inherent in performing liquefaction investigations, additional effort beyond the minimum standards presented herein may be required at some sites to adequately address the liquefaction potential at the site. The information presented herein does not relieve consultants of their duty to perform additional geologic or geotechnical engineering analyses they believe are necessary to adequately assess the liquefaction potential at a site.

The purpose of establishing minimum standards for liquefaction investigations is to:

- (a) Protect the health, safety, welfare, and property of the public by minimizing the potentially adverse effects of liquefaction and related hazards;
- (b) Assist property owners and land developers in conducting reasonable and adequate studies;
- (c) Provide consulting engineering geologists and geotechnical engineers with a common basis for preparing proposals, conducting investigations, and mitigation; and,
- (d) Provide an objective framework for regulatory review of liquefaction investigation reports.

1.1 Properties Requiring Liquefaction Analyses

(Figure 1.1)

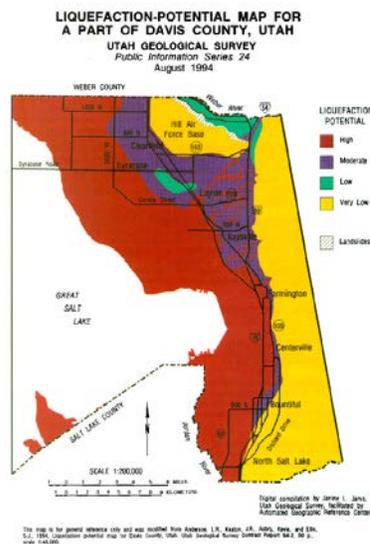


Figure 1.1 depicts generalized liquefaction susceptibility for the city, and shall be used to determine whether or not a site-specific liquefaction assessment is required for a particular project.

The Liquefaction-Potential map is based on a regional-scale investigation of Davis County. These maps may not identify all areas that have potential for liquefaction; a site located outside of a zone of required investigation is not necessarily free from liquefaction hazard. The zone does not always include lateral spread run-out areas. The Liquefaction-Potential Map for Davis County, UT Complete Technical Report is available from the Davis County Community Development Department.

The City of North Salt Lake Municipal Code, Title 10, Chapter 12: Sensitive Area District & Geologic Hazards, requires a site-specific liquefaction investigation to be performed prior to approval of a project based on the land-use/liquefaction potential matrix shown in the following table.

| Type Of Facility | High Potential Liquefaction Area | Acceptable Factor Of Safety |
|--|----------------------------------|-----------------------------|
| Critical facilities (essential facilities, hazardous facilities, and special occupancy structures as defined in section 10-12-20 | YES | 1.3 |
| Category III and IV in table 1604.58 of the most recently adopted edition of the IBC. | YES | 1.3 |
| Industrial and commercial buildings. | YES | 1.25 |
| Residential structures and subdivisions | NO | |

1.2 Roles of Engineering Geology and Geotechnical Engineering

The investigation of liquefaction hazard is an interdisciplinary practice. The site investigation report must be prepared by a qualified engineering geologist or geotechnical engineer, who must have competence in the field of seismic hazard evaluation and mitigation, and be reviewed by a qualified engineering geologist or geotechnical engineer, also competent in the field of seismic hazard evaluation and mitigation.

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Because of the differing expertise and abilities of qualified engineering geologists and geotechnical engineers, the scope of the site investigation report for the project may require that both types of professionals prepare and review the report, each practicing in the area of their expertise. Involvement of both a qualified engineering geologist and geotechnical engineer will generally provide greater assurance that the hazard is properly identified, assessed, and mitigated.

Liquefaction analyses are the responsibility of the geotechnical engineer, although the engineering geologist should be involved in the application of screening criteria (section 3.0, steps 1 and 2) and general geologic site evaluation (section 4.1) to map the likely extent of liquefiable deposits and shallow groundwater. Engineering properties of earth material shall be evaluated by the geotechnical engineer. The performance of the quantitative liquefaction analysis resulting in a numerical factor of safety and quantitative assessment of settlement and liquefaction-induced permanent ground displacement shall be performed by geotechnical engineers. The geotechnical and civil engineers shall develop all mitigation and design recommendations. Ground motion parameters for use in quantitative liquefaction analyses may be provided by either the engineering geologist or geotechnical engineer.

1.3 Minimum Qualifications of the Licensed Professional

Liquefaction analyses must be performed by qualified engineering geologists and qualified geotechnical engineers (see sections 10-12-050 and 10-12-060 of the City of North Salt Lake Municipal Code, Title 10, Chapter 12: Sensitive Area District & Geologic Hazards Ordinance).

2.0 GENERAL REQUIREMENTS

Except for the derivation of input ground motion (see section 5.0), liquefaction investigations should be performed in general accordance with the latest version of Recommended Procedures for Implementation of DMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California (Martin and Lew, 1999). Additional protocol for liquefaction investigations is provided in Youd and Idriss (1997). See the City of North Salt Lake Municipal Code, Title 10, Chapter 12: Sensitive Area District & Geologic Hazards Ordinance for supplemental requirements. Acceptable factors of safety are shown on the table in section 1.2.

3.0 PRELIMINARY SCREENING FOR LIQUEFACTION

The Liquefaction Study Area map is based on broad regional studies and does not replace site-specific studies. The fact that a site is located within a Liquefaction Study Area does not mean that there is a significant liquefaction potential at the site, only that a study shall be performed to determine if there is.

Soil liquefaction is caused by strong seismic ground shaking where saturated, cohesionless, granular soil undergoes a significant loss in shear strength that can result in settlement and permanent ground displacement. Surface effects of liquefaction include: settlement, bearing capacity failure, ground oscillations, lateral spread and flow failure. It has been well documented that soil liquefaction may occur

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in clean sands, silty sands, and sandy silt, non-plastic silts and gravelly soils. The following conditions must be present for liquefaction to occur:

- (a) Soils *must* be submerged below the water table;
- (b) Soils *must* be loose to moderately dense;
- (c) Ground shaking *must* be relatively intense; and
- (d) The duration of ground shaking *must* be sufficient for the soils to generate seismically-induced excess pore water pressure and lose their shearing resistance.

The following screening criteria may be applied to determine if further quantitative evaluation of liquefaction hazard is required:

- (a) If the estimated maximum past-, current-, and maximum-future-groundwater-levels (i.e., the highest groundwater level applicable for liquefaction analyses) are determined to be deeper than 50 feet below the existing ground surface or proposed finished grade (whichever is deeper), liquefaction assessments are not required. For soil materials that are located above the level of the groundwater, a quantitative assessment of seismically induced settlement is required.
- (b) If "bedrock" or similar lithified formational material underlies the site, those materials need not be considered liquefiable and no analysis of their liquefaction potential is necessary.
- (c) If the corrected standard penetration blow count, $(N1)_{60}$, is greater than or equal to 33 in all samples with a sufficient number of tests, liquefaction assessments are not required. If cone penetration test soundings are made, the corrected cone penetration test tip resistance, $qc1N$, should be greater than or equal to 180 in all soundings in sand materials, otherwise liquefaction assessments are needed.

If plastic soil ($PI > 20$) materials are encountered during site exploration, those materials may be considered non-liquefiable. Additional acceptable screening criteria regarding the effects of plasticity on liquefaction susceptibility are presented in Boulanger and Idriss (2004), Bray and Sancio (2006), and Seed and others (2003).

If the screening investigation clearly demonstrates the absence of liquefaction hazards at a project site and the City concurs, the screening investigation will satisfy the site investigation report requirement for liquefaction hazards. If not, a quantitative evaluation is required to assess the liquefaction hazards.

4.0 FIELD INVESTIGATIONS

Geotechnical field investigations are routinely performed for new projects as part of the normal development and design process. Geologic reconnaissance and subsurface explorations are normally

performed as part of the field exploration program even when liquefaction does not need to be investigated.

4.1 Geologic Reconnaissance

Geologic research and reconnaissance are important to provide information to define the extent of unconsolidated deposits that may be prone to liquefaction. Such information should be presented on geologic maps and cross sections and provide a description of the formations present at the site that includes the nature, thickness, and origin of Quaternary deposits with liquefaction potential. There also should be an analysis of groundwater conditions at the site that includes the highest recorded water level and the highest water level likely to occur under the most adverse foreseeable conditions in the future.

During the field investigation, the engineering geologist should map the limits of unconsolidated deposits with liquefaction potential. Liquefaction typically occurs in cohesionless silt, sand, and fine-grained gravel deposits of Holocene to late Pleistocene age in areas where the groundwater is shallower than about 50 feet.

Shallow groundwater may exist for a variety of reasons, some of which are of natural and or manmade origin. Landscape irrigation, on-site sewage disposal, and unlined manmade lakes reservoirs, and storm-water detention basins may create a shallow groundwater table in sediments that were previously unsaturated.

4.2 Subsurface Explorations

Subsurface explorations shall consist of drilled-borings and/or cone penetration tests (CPTs). The exploration program shall be planned to determine the soil stratigraphy, groundwater level, and indices that could be used to evaluate the potential for liquefaction by either in situ testing or by laboratory testing of soil samples. Borings and CPT soundings must penetrate a minimum of 50 feet below final ground surface. If a standard penetration test (SPT) is used, sampling intervals shall not exceed 2.5 feet.

For saturated cohesionless soils where the SPT $(N1)_{60}$ values are less than 15, or where CPT tip resistances are below 60 tsf, grain-size analyses, hydrometers tests, and Atterberg Limits tests shall be performed on these soils to further evaluate their potential for permanent ground displacement (Youd et al., 2002) and other forms of liquefaction-induced ground failure and settlement.

Where a structure may have subterranean construction or deep foundations (e.g., caissons or piles), the depth of investigation should extend to a depth that is a minimum of 20 feet (6 m) below the lowest expected foundation level (e.g., caisson bottom or pile tip) or 50 feet (15 m) below the existing ground surface or lowest proposed finished grade, whichever is deeper. If, during the investigation, the indices to evaluate liquefaction indicate that the liquefaction potential may extend below that depth, the exploration should be continued until a significant thickness (at least 10 feet or 3 m, to the extent possible) of nonliquefiable soils are encountered.

5.0 GROUND MOTION FOR LIQUEFACTION SUSCEPTIBILITY AND GROUND DEFORMATION ANALYSES

In regards to design ground accelerations for liquefaction analyses, The City of North Salt Lake prefers a probabilistic approach to determining the likelihood that different levels of ground motion will be exceeded at a particular site within a given time period. In order to more closely represent the seismic characteristics of the WFZ and better capture this possible high likelihood of a surface-faulting earthquake on the Salt Lake City segment, design ground motion parameters for liquefaction analyses shall be based on the peak accelerations with a 3.5 percent probability in 50 years (1,400-year return period). Peak bedrock ground motions can be readily obtained via the internet from the United States Geological Survey (USGS) National Seismic Hazard Maps, Data and Documentation web page (USGS, 2002), which is based on Frankel and others (2002). PGAs obtained from the USGS (2002) web page should be adjusted for effects of soil/rock (site-class) conditions in accordance with Seed and others (2001) or other appropriate methods that consider the site-specific soil conditions and their potential for amplification/deamplification of the high frequency strong motion.

6.0 REMEDIAL DESIGN

Sites, facilities, buildings, structures and utilities that are founded on or traverse liquefiable soils may require further remedial design and/or relocation to avoid liquefaction-induced damage. These should be investigated and evaluated on a site-specific basis with sufficient geologic and geotechnical evaluations to support the remedial design and/or mitigative plan. This design or plan may include: changes/modifications to the soil, foundation system, structural frame or support of the building, etc. and should be reviewed and approved by the City.

7.0 SUBMITTALS

Submittals for review shall include: boring logs; geologic cross-sections; laboratory data; discussions pertaining to how idealized subsurface conditions and parameters used for analyses were developed; analytical results, including computer output files (on request); and summaries of the liquefaction analyses and conclusions regarding liquefaction potential and likely types and amounts of ground failure.

Subsurface geologic and groundwater conditions must be illustrated on geologic cross-sections and must be utilized by the geotechnical engineer for the liquefaction analyses. If on-site sewage or storm-water disposal exists or is proposed, the liquefaction analyses shall include the effects of the effluent plume on liquefaction potential.

The results of any liquefaction analyses must be submitted with pertinent backup documentation (i.e., calculations, computer output, etc.). Printouts of input data, output data (on request), and graphical plots must be submitted for each computer-aided liquefaction analysis. In addition, input data files, recorded on diskettes, CDs, or other electronic media, may be requested to facilitate the City's review.

