



STAFF REPORT

Report To: Board of Supervisors **Meeting Date:** August 6, 2020

Staff Contact: Darren Schulz, Public Works Director

Agenda Title: For Possible Action: Discussion and possible action regarding a Bureau of Land Management (BLM) Right-of-Way Grant Amendment to allow Carson City to perform roadway maintenance and use a portion of Sedge Road and Brunswick Canyon Road to access existing right-of-way previously granted under NVN-038823 for another portion of the road, a pipeline, reservoir site, dam, and spillway. (Darren Schulz; DSchulz@carson.org and Dan Stucky; DStucky@carson.org)

Staff Summary: During the January 2017 winter storms, significant stormwater runoff through Brunswick Canyon caused substantial erosion to Brunswick Canyon Road at multiple locations. Since the events, Carson City has worked with the Federal Emergency Management Agency (FEMA) to secure grant funding for the roadway repairs. Additionally, the sections of roadway requiring repair are located on BLM property where formal right-of-way was never established. Therefore, as part of the process for developing construction plans for the roadway repairs, the City coordinated with BLM to amend an existing right-of-way grant for the reservoir site to add right-of-way along a portion of Sedge Road and Brunswick Canyon Road in order to repair the roadway, perform future roadway maintenance, and allow for access to the Brunswick Reservoir and the various components of the dam, reservoir, spillway, and the effluent transmission main. The additional right-of-way included in this amended grant is critical for the overall operations and maintenance of the reservoir site and effluent transmission main, as well as for performing necessary testing for permit compliance. The Brunswick Canyon Road Project design is at 100% and construction is anticipated for summer/fall of 2020.

Agenda Action: Formal Action / Motion **Time Requested:** 5 minutes

Proposed Motion

I move to approve, and authorize the Public Works Director to sign, the Right-of-Way Grant Amendment.

Board's Strategic Goal

Sustainable Infrastructure

Previous Action

N/A

Background/Issues & Analysis

The Brunswick Canyon Road Project will repair and improve the drainage on the road sections damaged by the January 2017 winter storms. Large volumes of water run off came down through the canyon and washed over the Brunswick Canyon Road and caused significant erosion and damage to the road and shoulder at various locations. Currently the road is very difficult to nearly impassable for both Carson City staff to access the effluent transmission pipeline and reservoir and for any general public attempting to access the surrounding

public lands. FEMA has accepted the project and will fund 75% of the cost to repair the road with Carson City providing the funds to meet the 25% match requirement. Per FEMA requirements, the amended right-of-way was required to give Carson City the proper access to these roads to perform the roadway repairs. Since then, Carson City has been working with BLM to acquire the amended right-of-way.

The reconstructed roadway will improve access and safety, provide adequate drainage to reduce erosion, and help prevent water/debris from over-topping the roadway. The amended right-of-way grant will also allow Carson City permanent access to the road to perform regular maintenance and repairs as needed to the roadway and critical effluent infrastructure without the need to go through the time consuming process to obtain temporary right-of-way every time maintenance is required on Brunswick Canyon Road.

Applicable Statute, Code, Policy, Rule or Regulation

NRS 266.265 and 271.265

Financial Information

Is there a fiscal impact? No

If yes, account name/number: N/A

Is it currently budgeted? No

Explanation of Fiscal Impact: N/A

Alternatives

Do not accept the Right-of-Way Grant Amendment and propose a modified motion or alternate direction to staff.

Attachments:

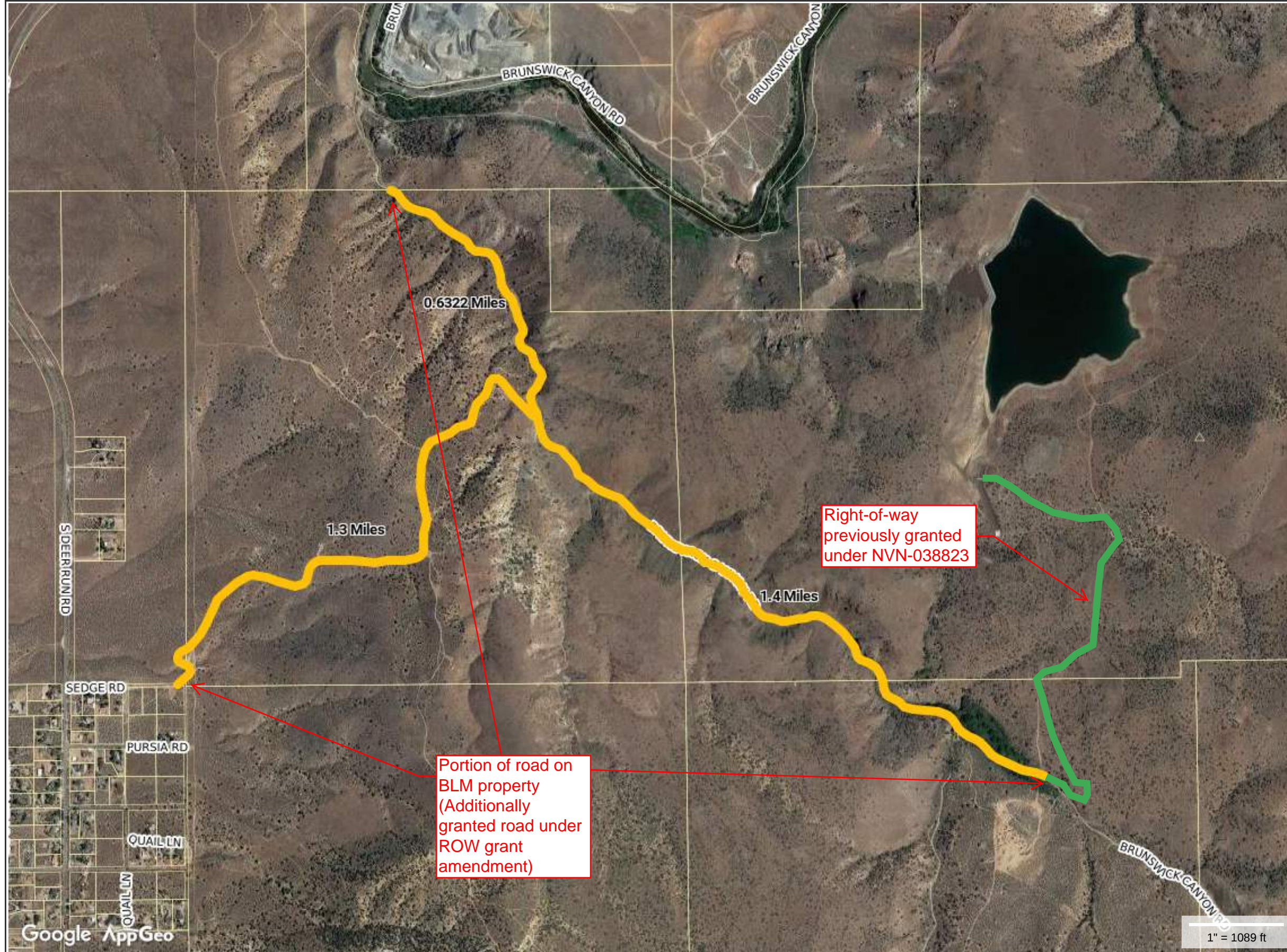
[1_Brunswick Canyon Road ROW Grant Amendment Figure.pdf](#)

[2_ROW Grant Amendment_NV-038823.pdf](#)

Board Action Taken:

Motion: _____	1) _____	Aye/Nay
	2) _____	_____

(Vote Recorded By)



Portion of road on BLM property (Additionally granted road under ROW grant amendment)

Right-of-way previously granted under NVN-038823



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Carson City , NV makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Geometry updated 11/17/2018
Data updated 11/17/2018

Form 2800-14
(August 1985)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Issuing Office
Sierra Front Field Office

Serial Number
NVN 038823 Amendment

RIGHT-OF-WAY GRANT/TEMPORARY USE PERMIT

1. A (right-of-way) (permit) is hereby granted pursuant to:

- a. Title V of the Federal Land Policy and Management Act of October 21, 1976 (90 Stat. 2776; 43 U.S.C. 1761);
- b. Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185);
- c. Other (describe) _____

2. Nature of Interest:

a. By this instrument, the holder Carson City Board of Supervisors; 201 N. Carson Street, Suite 2 Carson City, NV 89701 receives a right to construct, operate, maintain, and terminate a reservoir site, dam, spillway and access roads on public lands (or Federal land for MLA Rights-of-Way) described as follows:

(a) The original granted road (Brunswick/Hackett trail) to access the reservoir site traveling south from the reservoir site to Brunswick Canyon is 4,820.20 feet in length with varying widths of 57.5 feet to 97.5 feet. The additionally granted access roads traveling northwest along Brunswick Canyon and southwest along Sedge Rd. are 17,594 feet in length and 66 feet in width. The total length of the road right-of-way granted is 22,414.2 feet. This road right-of-way crosses the following-described public land:

Mount Diablo Meridian, Nevada

T. 15 N., R. 20 E.,

Sec. 13: NW1/4NE1/4, SW1/4NE1/4, NE1/4NW1/4, NE1/4SW1/4, SW1/4SW1/4, N1/2SE1/4SW1/4, NE1/4SE1/4 and NW1/4SE1/4;
Sec. 14: SE1/4SE1/4.

T. 15 N., R. 21 E.,

Sec. 18: NW1/4SW1/4, SW1/4SW1/4, SE1/4SW1/4, NE1/4SE1/4 and SE1/4SE1/4;
Sec. 19: NE1/4 and NE1/4NW1/4.

Containing roughly 35.22 acres.

(b) A reservoir site, dam, and spillway located on the following described public land:

Mount Diablo Meridian, Nevada

T. 15 N., R. 21 E.,

Sec. 7: S1/2S1/2SE1/4;
Sec. 17: W1/2W1/2NW1/4;
Sec. 18: NE1/4 and NW1/4SE1/4.

Containing 281.58 acres.

b. The right-of-way or permit area granted herein is *See Above feet wide, *See Above feet long and contains *See Above acres, more or less. If a site type facility, the facility contains *See Above acres.

c. This instrument shall terminate on March 28, 2034, NA years from its effective date unless, prior thereto, it is relinquished, abandoned, terminated, or modified pursuant to the terms and conditions of this instrument or of any applicable Federal law or regulation.

d. This instrument may may not be renewed. If renewed, the right-of-way or permit shall be subject to the regulations existing at the time of renewal and any other terms and conditions that the authorized officer deems necessary to protect the public interest.

e. Notwithstanding the expiration of this instrument or any renewal thereof, early relinquishment, abandonment, or termination, the provisions of this instrument, to the extent applicable, shall continue in effect and shall be binding on the holder, its successors, or assigns, until they have fully satisfied the obligations and/or liabilities accruing herein before or on account of the expiration, or prior termination, of the grant.

3. Rental:

For and in consideration of the rights granted, the holder agrees to pay the Bureau of Land Management fair market value rental as determined by the authorized officer unless specifically exempted from such payment by regulation. Provided, however, that the rental may be adjusted by the authorized officer, whenever necessary, to reflect changes in the fair market rental value as determined by the application of sound business management principles, and so far as practicable and feasible, in accordance with comparable commercial practices.

4. Terms and Conditions:

- a. This grant or permit is issued subject to the holder's compliance with all applicable regulations contained in Title 43 Code of Federal Regulations parts 2800 and 2880.
- b. Upon grant termination by the authorized officer, all improvements shall be removed from the public lands within 120 days, or otherwise disposed of as provided in paragraph (4)(d) or as directed by the authorized officer.
- c. Each grant issued pursuant to the authority of paragraph (1)(a) for a term of 20 years or more shall, at a minimum, be reviewed by the authorized officer at the end of the 20th year and at regular intervals thereafter not to exceed 10 years. Provided, however, that a right-of-way or permit granted herein may be reviewed at any time deemed necessary by the authorized officer.
- d. The stipulations, plans, maps, or designs set forth in Exhibit(s) A, B, C, D & E, dated *See Below, attached hereto, are incorporated into and made a part of this grant instrument as fully and effectively as if they were set forth herein in their entirety.
- e. Failure of the holder to comply with applicable law or any provision of this right-of-way grant or permit shall constitute grounds for suspension or termination thereof.
- f. The holder shall perform all operations in a good and workmanlike manner so as to ensure protection of the environment and the health and safety of the public.

4.d.

- Exhibit A: Stipulations created 06/17/2020**
- Exhibit B: NVN 038223 map created 06/10/2020**
- Exhibit C: Road Plan of Development updated 6/15/2020**
- Exhibit D: Brunswick Canyon Rd. Plans created 11/18/2019**
- Exhibit E: Original Supplement to Comprehensive Water Plan created 11/12/1981**

IN WITNESS WHEREOF, The undersigned agrees to the terms and conditions of this right-of-way grant or permit.

(Signature of Holder)

(Signature of Authorized Officer)

(Title)

(Title)

(Date)

(Effective Date of Grant)

Exhibit A:

Additional Terms and Conditions

Abbreviations

BLM U.S. Department of the Interior, Bureau of Land Management
POD Plan of Development

Definitions

Grant: the instrument that the BLM has issued to the holder authorizing the use of public lands.

Holder: the entity to whom the BLM has issued grant no. N-38823.

Authorized Officer: any employee of the Department of the Interior to whom has been delegated the authority to whom has been delegated the authority to approve all actions required for the granting and management of rights-of-way. During the term of the grant, the holder shall contact the authorized officer, through the authorized officer’s designated representative, in writing or voice telephone call at:

Sierra Front Field Office
Attn: Assistant Field Manager
Lands and Realty
5665 Morgan Mill Road
Carson City, Nevada 89701
Telephone: (775) 885-6000

Right-of-way: the public lands that the BLM has authorized the holder to use or occupy under N-38823. The holder may only use the right-of-way for the specific use the grant authorizes, as determined by the authorized officer.

Facility: an improvement or structure, whether existing or planned, that is or would be owned and controlled by the holder within a right-of-way. For purposes of communication site rights-of-way or uses, facility means the building, tower, and related incidental structures or improvements authorized under the terms of the grant.

Notice to proceed: a written authorization, issued on Form 2800-15 Right-of-way Notice to Proceed, by the authorized officer that allows the holder to initiate actions under the grant. The authorized officer may issue separate notices to proceed if the grant involves distinct work phases and/or locations. Each notice to proceed will specify the nature of work, location, and dates to be authorized.

Substantial deviation: a change in the authorized location or use which requires:

- 1) Construction or use outside the boundaries of the right-of-way; or
- 2) Any change from, or modification of, the authorized use. Examples of substantial deviation may include: adding equipment, overhead or underground lines, pipelines, structures, or other facilities not included in the grant.

Surface disturbing activities: any authorized action that disturbs vegetation and/or surface soil.

General

- a. This grant is subject to all valid rights existing on the effective date of the grant.
- b. This grant is issued subject to the holder also obtaining permits or clearances from applicable Federal agencies, State, Tribal, County, and other local authorities with regulatory authority over the approved land uses described herein.
- c. The holder shall contact the authorized officer, either in writing or by telephone, and obtain written approval prior to beginning any activity that is a substantial deviation from this grant or that will cause new surface disturbance.
- d. In case of change of address, the holder shall immediately notify the authorized officer in writing as previously described.
- e. The holder of this grant or the holder's successor in interest shall comply with Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d et seq.) and the regulations of the Secretary of the Interior issued pursuant thereto.
- f. The holder shall conduct all activities associated with the construction, operation, and termination of the facility within the authorized limits of the right-of-way.
- g. The holder shall maintain the right-of-way in a safe, usable condition, as directed by the authorized officer.
- h. All design, material, and construction, operation, maintenance, and termination practices shall be in accordance with safe and proven engineering practices.
- i. The right-of-way shall be maintained in a sanitary condition at all times; waste material at those sites shall be properly contained and disposed of promptly at an appropriate waste disposal site. "Waste" means all discarded matter including, but not limited to, human waste, trash, garbage, refuse, oil drums, used petroleum products, ashes, and equipment.
- j. No signs or advertising devices shall be placed on the right-of-way or on adjacent public lands, nor on approved facilities, except those posted by or approved in writing by the authorized officer.

Holder's Representative

- k. The holder shall designate a representative(s) who shall have the authority to act upon and to implement instructions from the authorized officer. The holder's representative shall be available for communication with the authorized officer within a reasonable time when construction or other surface disturbing activities are underway.

Public Access and Use of Lands

- l. The holder shall permit free and unrestricted public access to and upon the right-of-way, for all lawful purposes, except for those specific areas designated as restricted by the authorized officer to protect the public, wildlife, livestock, or facilities constructed within the right-of-way.
- m. The holder shall provide for the safety of the public entering the right-of-way. This includes, but is not limited to, barricades for open trenches, flagmen/women with communication systems for single-lane roads without inter-visible turnouts, and signage of hazards.
- n. Existing roads and trails on public lands that are blocked as the result of the holder's construction, operations, or maintenance activities shall be rerouted or rebuilt as directed by the authorized officer.

Road Maintenance

- o. The road proposed as part of this grant shall be constructed and maintained in accordance with the BLM standards prescribed for a resource type road.
- p. The holder shall furnish and install culverts of the gauge, materials, diameter(s), and length(s) indicated and approved by the authorized officer. Culverts shall be free of corrosion, dents, or other deleterious conditions. Culverts shall be placed on channel bottoms on firm, uniform beds which have been shaped to accept them and aligned to minimize erosion and allow fish passage, where applicable. Backfill shall be thoroughly compacted. No equipment shall be routed over a culvert until backfill depth is adequate to protect the culverts.
- q. As directed by the authorized officer, the holder shall submit a complete culvert list to reflect the drainage plan for the road. The list shall include, but not be limited to, size(s), lengths, and locations of the culverts.
- r. The minimum diameter for culverts shall be 18 inches.
- s. The holder shall construct low-water crossings in a manner that will prevent any blockage or restriction of the existing channel, including fish passage. Material removed shall be stockpiled for use in rehabilitation of the crossings.
- t. All roads and parking areas shall be constructed to provide drainage and minimize erosion. Culverts shall be installed if necessary to maintain drainage. Areas to be used for roads and parking shall be surfaced with aggregate as directed by the authorized officer.
- u. As directed by the authorizing officer, all road segments shall be winterized by providing a well-drained roadway by constructing water bars, maintaining drainage, and any additional measures necessary to minimize erosion and other damage to the roadway or the surrounding public lands.

Operations and Maintenance of Approved Facilities

- v. The holder shall construct, operate, and maintain the facilities, improvements, and structures within this right-of-way in strict conformity with the POD dated November 12, 1981 (Supplement to Comprehensive Water Plan) and June 17, 2020 (Roadway POD). Any relocation, additional construction, or use that is not in accord with either approved POD, shall not be initiated without the prior written approval of the authorized officer. Upon request, a copy of the complete right-of-way grant, including all stipulations and approved POD, shall be made immediately available to the authorized officer on the right-of-way during construction, operation, maintenance, and termination. Noncompliance with the above requirement will be grounds for an immediate temporary suspension of activities if it constitutes a threat to public health and safety or the environment.
- w. The holder shall not modify the layout, locations, or types of equipment or facilities shown in Exhibits (B & D) of this grant without prior written approval from the authorized officer. Variances from the site plans or drawings shown in Exhibits (B & D) must be approved in writing before commencing with new designs or specifications.
- x. Specific sites as identified by the authorized officer (e.g. archaeological sites, areas with threatened and endangered species, or fragile watersheds) where construction equipment and vehicles shall not be allowed shall be clearly marked onsite by the holder before any construction or surface disturbing activities begin. The holder shall be responsible for

assuring that construction personnel are well trained to recognize these markers and understand the equipment movement restrictions involved.

- y. Construction-related traffic shall be restricted to routes approved by the authorized officer. New access roads or cross-country vehicle travel will not be permitted unless prior written approval is given by the authorized officer. Authorized roads used by the holder shall be rehabilitated or maintained when construction activities are complete as approved by the authorized officer.
- z. Within 30 days after receipt of the authorized officer's written notification of damage or defects found in the structure or related facilities the holder will restore the facility to the originally constructed condition, using materials of equal or superior quality to those used in the original construction.
- aa. Should the holder fail to perform the required maintenance or repair within 30 days of receipt of the authorized officer's written notification to do so, BLM may perform the required maintenance or repair, or at the discretion of the authorized officer, remove the facility, at the holder's expense, including the administrative costs to BLM to effect any such action.

Wildland Fire Management

- bb. The holder shall be responsible, as determined by the authorized officer, for fire suppression costs resulting from wildland fire caused by the holder, including employees, agents, and/or representatives, and by all clients, customers, and/or contractors under the holder's supervision or control.
- cc. The holder shall be responsible for informing employees, agents, representatives, clients, customers, and/or contractors of the current fire danger and any required precautions or restrictions that may be placed in effect by the BLM or the State of Nevada. The holder may obtain current fire conditions from the Sierra Front Interagency Fire Dispatch Center online or by telephone at (775) 883-5995.
- dd. The holder shall immediately report all wildland fires that start within the right-of-way to the Sierra Front Interagency Dispatch Center by telephone or to other local emergency response agencies if the Sierra Front Interagency Dispatch Center cannot be contacted.
- ee. When directed by the authorized officer, the holder shall prepare a fire prevention and suppression plan that shall be reviewed, modified, and approved, as appropriate, by the authorized officer. The holder shall take into account such measures for prevention and suppression of fire on the right-of-way and other public land used or traversed by the holder in connection with operations of the right-of-way. Project personnel shall be instructed as to individual responsibility in implementation of the plan.
- ff. During conditions of extreme fire danger, use of the right-of-way may be limited or suspended in specific areas, or additional measures may be required, by the authorized officer.
- gg. When requested by the authorized officer, the holder shall make his/her equipment, already at the site with operators, temporarily available for fighting fires in the vicinity of the right-of-way. Payment for such services will be made at rates determined by the authorized officer.

Hazardous Materials and Petroleum Products

- hh. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic

Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193). Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the Authorized Officer concurrent with the filing of the reports to the involved Federal agency or State government.

- ii. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act of 1976, 42 U.S.C. 6901 at ag.) on the right-of-way (unless the release or threatened release is wholly unrelated to the holder's activity on the right-of-way. This agreement applies without regard to whether a release is caused by the holder or its contractors, subcontractors, or agents.
- jj. The holder is prohibited from discharging oil or other pollutants into or upon the navigable waters of the United States, adjoining shorelines, or the waters of the contiguous zone in violation of Section 311 of the Clean Water Act as amended, 33 U.S.C. 1321, and the regulations issued thereunder, or applicable laws of the State(s) of Nevada and regulations issued thereunder. The holder shall give immediate notice of any such discharge to the authorized officer and such other Federal and State officials as are required by law to be given such notice.

Termination

- kk. Six months prior to termination of the grant, the holder shall contact the authorized officer to arrange a joint inspection of the right-of-way. This inspection will be held to agree to an acceptable termination and rehabilitation plan. This plan shall include, but is not limited to, removal of facilities, drainage structures, or surface material, recontouring, topsoiling, or seeding. The authorized officer must approve the plan in writing prior to the holder's commencement of any termination activities. The holder shall be responsible for the cost and implementation of the approved rehabilitation plan.

Conveyance Out of Federal Ownership

- ll. In the event that the public land underlying the right-of-way encompassed in this grant, or portion thereof, is conveyed out of Federal ownership and administration of the right-of-way or the land underlying the right-of-way is not being reserved to the United States in the patent/deed and/or the right-of-way is not within a right-of-way corridor being reserved to the United States in the patent/deed, the United States waives any right it has to administer the right-of-way, or portion thereof, within the conveyed land under Federal laws, statutes, and regulations, including the regulations in Title 43 CFR parts 2800 and 2880, as well as any rights to have the holder apply to the BLM for amendments, modifications, or assignments and for the BLM to approve or recognize such amendments, modifications, or assignments. At the time of conveyance, the patentee/grantee, and their successors and assigns, shall succeed to the interests of the

United States in all matters relating to the right-of-way, or portion thereof, within the conveyed land and shall be subject to applicable State and local government laws, statutes, and ordinances. After conveyance, any disputes concerning compliance with the use and the terms and conditions of the right-of-way shall be considered a civil matter between the patentee/grantee and the holder.

Air Quality

- mm. The holder shall meet Federal, State, and local emission standards for air quality.
- nn. The holder shall furnish and apply water or other means satisfactory to the authorized officer for dust control.

Noxious Weeds and Pests

- oo. The holder shall be responsible for controlling noxious weed infestations within the approved limits of the right-of-way and areas where infestations have spread from the right-of-way as a result of the holder's operations. The holder will consult with the authorized officer for planning acceptable weed control measures on all noxious weed infestations directly associated with the right-of-way.
- pp. The holder shall monitor the right-of-way, at least once annually during the growing season, for the presence of noxious weed species listed on the Nevada Department of Agriculture Nevada Noxious Weed List. The holder shall maintain a record of monitoring dates, person/s completing the monitoring, qualifications of person/s completing the monitoring, species found, and the extent of infestations (e.g. number of plants found, acres of land that are infested, etc.). If required, the holder shall provide the above described monitoring data to the authorized officer annually or as specified by the authorized officer. The holder may be required to maintain records of additional monitoring data as directed by the authorized officer.
- qq. As soon as practicable after discovery of a noxious weed infestation, the holder shall report the infestation to the authorized officer by telephone call. The holder shall develop and implement, as approved by the authorized officer, a noxious weed management plan to control the infestation through treatment (manual, mechanical, biological, chemical, prescribed fire, or other approved methods) and monitoring.
- rr. Prior to entering the right-of-way, all vehicles and equipment performing surface disturbing activities in connection with the right-of-way shall be cleaned thoroughly to minimize the introduction of new noxious weed species to the area. The holder shall provide written documentation of when and how equipment was cleaned if required by the authorized officer.
- ss. In locations with known noxious weed infestations, all vehicles and equipment performing surface disturbing activities within the right-of-way shall be thoroughly cleaned to reduce the spread of noxious weed species outside the right-of-way. The holder shall set up a cleaning station within the ROW in a location approved by the authorized officer. The holder shall provide written documentation of when and how equipment was cleaned if required by the authorized officer.
- tt. All seed, hay, straw, gravel, or other earth materials used on the right-of-way shall be certified as noxious weed-free by the Nevada Department of Agriculture or equivalent state agency prior to being used on the right-of-way. The holder will provide documentation of noxious weed-free certification at the request of the authorized officer. If such certification cannot be obtained, the holder will consult with the authorized

officer and obtain written approval of acceptable weed monitoring measures prior to using the materials on the right-of-way.

Pesticide or Biological Control Agent Use

- uu. The use of pesticides shall comply with Federal and state laws governing their proper usage, storage and disposal, and any limitations imposed by the Secretary of the Interior. Prior to the use of pesticides or biological control agents, the holder will obtain from the authorized officer written approval of a Pesticide Use Proposal/Plan (PUP) or Biological Control Agent Use Proposal/Plan showing the type and quantity of material to be used, pest(s) to be controlled, method of application, location of storage and disposed-of containers, and any other information deemed necessary by the authorized officer. Emergency use of pesticides shall be approved in writing by the authorized officer prior to such use and shall use BLM approved mechanical methods or chemicals.

Cultural Resources

- vv. The holder, or any person working on their behalf, shall not collect any historic (50 years or older) or prehistoric artifacts from federal lands. Collection of artifacts is a misdemeanor or felony under multiple federal laws, including the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470aa-470mm; Public Law 96-95).
- ww. Any cultural (historic or prehistoric site or object) or paleontological resources discovered by the holder, or any person working on their behalf, during the course of activities on federal land shall be immediately reported to the authorized officer by telephone, followed by written confirmation sent to the address listed above. The holder shall suspend all operations in the immediate area of such discovery and protect it until an evaluation of the discovery can be made by the authorized officer.

For cultural resources other than Native American human remains, funerary items, sacred objects, or objects of cultural patrimony, this evaluation will determine the significance of the discovery and what mitigation measures are necessary to allow the activities to proceed. The holder is responsible for the cost of evaluation and mitigation. Any decision on treatment and/or mitigation of discoveries will be made by the authorized officer after consulting with the holder. Operations may resume only upon written authorization to proceed from the authorized officer.

For discoveries involving Native American human remains, funerary items, sacred objects, or objects of cultural patrimony, the holder must stop activities in the immediate vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer. The holder is responsible for the cost of consultation, evaluation and mitigation. Any decision on treatment and/or mitigation will be made by the authorized officer after consulting with the holder.

Cadastral Survey and Land Status

- xx. The holder shall protect all survey monuments found within the right-of-way. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U.S. Coastal and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil (both public and private) survey monuments. In the event of obliteration or disturbance of any of the above, the holder shall immediately report the incident, in writing, to the authorized officer and the respective installing authority if known. Where

General Land Office or Bureau of Land Management right-of-way monuments or references are obliterated during operations, the holder shall secure the services of a registered land surveyor or a Bureau cadastral surveyor to restore the disturbed monuments and references using surveying procedures found in the Manual of Surveying Instructions for the Survey of the Public Lands in the United States, latest edition. The holder shall record such survey in the appropriate county and send a copy to the Authorized Officer. If the Bureau cadastral surveyors or other Federal surveyors are used to restore the disturbed survey monument, the holder shall be responsible for the survey cost.

Wildlife – General

- yy. The holder shall notify the authorized officer and the Nevada Department of Wildlife within 24 hours of any injuries and/or mortalities of special status wildlife within the right-of-way during construction, operation, maintenance, or reclamation /decommissioning activities.
- zz. The holder shall remove only the minimum amount of vegetation necessary for the construction or maintenance of facilities. Topsoil shall be conserved during excavation and reused as cover on disturbed areas to facilitate regrowth of vegetation.
- aaa. Construction holes left open overnight shall be covered. Covers shall be secured in place and shall be strong enough to prevent livestock or wildlife from falling into the hole or trench. If adequate cover cannot be installed, effective escape ramps shall be installed to allow livestock or wildlife to avoid entrapment. The holder shall inspect construction holes and trenches prior to backfilling and shall remove trapped wildlife and/or livestock prior to backfilling.
- bbb. Open-top vertical pipes, including vents, stacks, fence posts, and survey markers, of any diameter, shall be securely capped or screened to prevent unintentional trapping of wildlife.
- ccc. Artificial facility lighting shall be shielded to direct light towards the ground within the approved facility boundary.
- ddd. All guy wires shall be effectively marked to be visible to birds, wild horses and burros, and big game animals.
- eee. Fences, gates, and brace panels affected by the holder's use of the right-of-way shall be re-constructed to appropriate BLM standards and/or specifications as determined by the authorized officer. The holder shall use the wire spacing standard shown in Illustration 2 of BLM Handbook H-1741-1 (Fencing) for "*Combination of Cattle (Requiring Greater Restriction of Livestock Movements) With Deer, Elk, Moose, or Antelope*" when constructing or re-constructing fences which control the movement of livestock. The holder shall disconnect fence wires from all fence posts between bracing structures prior to stretching wires to ensure adequate tensioning. When re-constructing or modifying wire fences, the holder shall repair or replace bracing structures to ensure the integrity of the fence.

Wildlife – Migratory Birds and Raptors

- fff. The holder shall report observed raptor or other bird nests on existing facilities to the authorized officer as soon as practicable. The holder may be directed by the authorized officer to remove nests from facilities (e.g. power lines, communications towers, buildings, etc.) outside of nesting seasons.

Visual Resource Management






- ggg. Colors on all above-ground structures not subject to safety requirements, such as buildings, antennas, towers, and microwave dishes, shall be earth/vegetative tones compatible with existing natural site features and complementary colors. The holder shall use Standard Environmental Color Chart CC-001 (June 2013 or most recent edition) to obtain paint colors to use on the right-of-way. Copies of Standard Environmental Color Chart CC-001 may be obtained from the BLM at the address listed above.
- hhh. The paint color/s approved for use on above-ground structures within the right-of-way is/are Covert Green/Shadow Gray/Shale Green/Sudan Brown/Beetle/Yuma Green. The holder shall not use Carlsbad Canyon, Juniper Green, or Carob Brown without prior written authorization from the authorized officer.
- iii. Paint colors shall not be more glossy than a semi-gloss finish. Paint colors that have faded from sun exposure shall be repainted to restore the approved color from Standard Environmental Color Chart CC-001.
- jjj. Structures which cannot be painted or require a non-compatible color to operate in accordance with manufacturer specifications shall be immediately reported to the authorized officer. The authorized officer will work with the holder to establish alternate means of reducing the visual impact, such as constructing a screening fence to block the view or installing a cover. Alternative means to reduce visual impacts shall be approved by the authorized officer prior to use on the right-of-way.

Soil

- kkk. No construction or routine maintenance activities shall be performed during periods when the soil is too wet to adequately support construction equipment. If such equipment creates ruts in excess of three (3) inches deep, the soil shall be deemed too wet to adequately support construction equipment.
- lll. Earthwork and grading, including road surfacing, drainage structures, and ditch profiles, shall not block natural drainage systems nor change the character of natural drainage systems. Earthwork, grading, erosion control structures (e.g. culvert pipes, wing ditches, etc.), and stream crossings, including crossings with either perennial or intermittent flows, shall not cause excessive siltation that damages fish and/or wildlife habitat in waterways or water bodies.

Exhibit B:

ROW Grant NVN 038823

- Legend**
-  Carson City District
 -  BLM
 -  PVT
 -  Access Roads of 38823
 -  Reservoir Site of 38823



No Warranty is made by the Bureau of Land Management as to the accuracy, reliability, or completeness of these data for individual use or aggregate use with other data.

United States Department of the Interior
 Bureau of Land Management
 Carson City District Office
 5665 Morgan Mill Rd.
 Carson City, NV, 89701
 (775) 885-6000

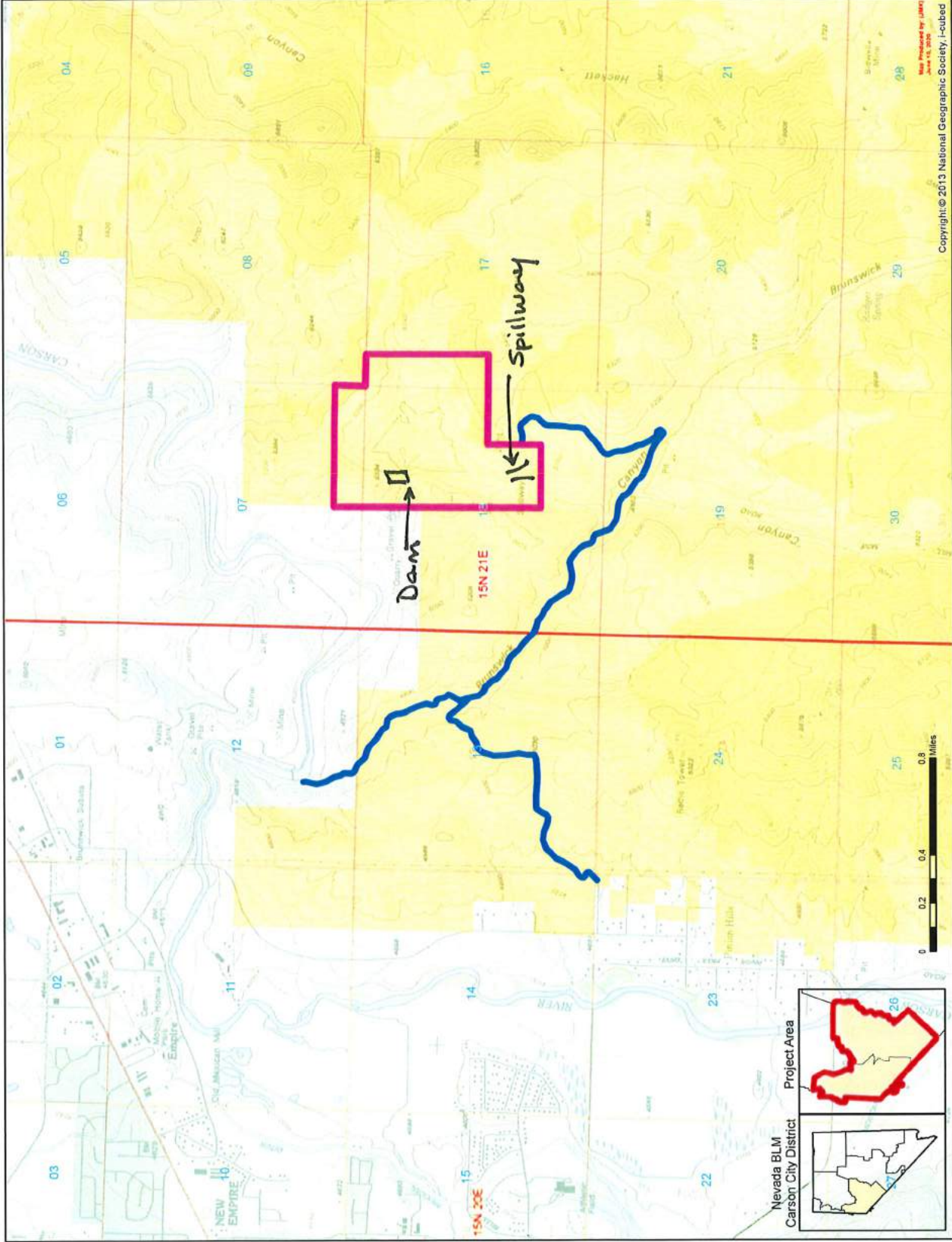


Exhibit C:



CARSON CITY NEVADA

Consolidated Municipality and State Capital

PUBLIC WORKS

December 10th, 2019

Terah L. Malsam
 Realty Specialist
 Bureau of Land Management
 Carson City District Office

RE: Roadway Plan of Development
 Brunswick Canyon Road

Dear Mrs. Malsam:

The following information is provided to help explain Carson City's need to repair Brunswick Canyon Road as well as the methods proposed to be used.

1. Purpose and Need for the Facility

Brunswick Canyon Road has been used for many years as access by the general public to public lands and by the City for performing routine maintenance on its effluent reuse infrastructure. The City uses Brunswick Canyon Road to access the City's effluent transmission main and Brunswick Reservoir. City crews routinely drive along the alignment of the transmission main to check for leaks, operate valves, and sample groundwater springs in the area of the reservoir. In addition, the general public uses the road to access public lands. This is a low volume road due to the terrain and is used throughout all seasons.

Due to large rain events that occurred in the winter of 2017-2018, the road has been damaged and is no longer usable by passenger vehicles. The City is proposing to repair damages to the road so that City crews can more easily access the effluent reuse facilities as well as maintain access to public lands (BLM and Carson City Open Space).

Brunswick Canyon Road is the only route that provides reasonable access to the City's effluent reuse facilities. If the road is not able to be repaired, the City would need to use an off highway vehicle for access. Direct and reliable access to maintain these critical facilities is essential to City operations and the public. The reuse of treated effluent for land application saves users money by not having to pay for more complex treatment processes. Additionally, the usage of effluent water to irrigate recreational areas and ranch lands reduces the need to use potable water and conserves our precious groundwater resources.

2. Right-of-way Location

A set of drawings is provided showing the location of the project and road repair methods. The project is to be completed in S12 T15N R20E and S13 T15N R20E. The City is not proposing to obtain right-of-way for the road.

3. Facility Design Factors

The City is proposing to repair the road to its original condition in damaged locations. This would include rebuilding the road with a cross slope of 2-4%, maintaining the roads existing running slope which averages 6%, re-establishing the drainage ditch away from



CARSON CITY NEVADA

Consolidated Municipality and State Capital

PUBLIC WORKS

the roadway, fill in rutting and erosion where water has run longitudinally along the road, and removing excess material where adjacent drainages have deposited material onto the road.

4. Additional Components

The only additional component to be added to the road is rock armoring between the drainage ditch and road in locations that are more susceptible to being washed out. This work is to be completed within the area of the road and drainage ditch and no other additional components are planned to be completed.

5. Government Agencies Involved

The City has been awarded a grant by the State which is funded by FEMA in order to complete the work. The State and FEMA are the two agencies besides Carson City Public Works that would be involved with the project.

6. Construction of Facilities

Construction of the facility is anticipated to be completed by using an excavator, grader, roller, water truck, backhoe, 10 yard dump truck, and bulldozer. 3-4 operators and 3-4 laborers are anticipated to be needed to complete the work. Specific equipment and man power can be provided once a contractor has been awarded the project.

The general repair will include removing sediment and rock from within the ditch in order to re-establish the drainage ditch. Brush and other debris that has been mixed in or is growing in the material to be used will be removed and taken to the landfill. Material removed from the drainage ditch (i.e. material originating from the roadway and mobilized during the 2018-2018 storm events) will be returned and used to reconstruct the road by building up locations where the road has been eroded away. The road cross slope is to be re-established to direct stormwater off of the road and into the ditch.

Access to the site will be from Sedge Road off of S. Deer Run Road.

7. Resource Values and Environmental Concerns

Traffic and Recreation- The proposed project will repair the existing facility back to its original condition. The City does not expect that additional traffic will be created compared to usage prior to the damage however, the general public that is no longer able to use the road due to its current condition will now be able to.

Soils and Vegetation- The project will be completed within the existing roadway and drainage ditch. Soil and vegetation outside of the project area will remain undisturbed.

Environmental- Access for City crews to the effluent reuse infrastructure is essential for completing maintenance and preventing failures of the system. Restoring better access by reconstructing the road will allow for better care of the environment.

8. Stabilization and Restoration



CARSON CITY NEVADA

Consolidated Municipality and State Capital

PUBLIC WORKS

The existing material to be used for reconstructing the road contains a substantial amount of larger rock that will be used to help armor the ditch bank adjacent to the road and reduce future erosion. Vegetation and trash mixed in with the material used from the ditch that is relocated to the road will be removed from the site and taken to the Carson City Landfill. The Contractor will be required to work within the road and drainage ditch limiting ground disturbance to those areas only.

9. Operation and Maintenance

The city will complete maintenance to the road on an as needed basis with equipment such as an excavator, grader, roller, water truck, backhoe, 10 yard dump truck, and/or bulldozer to maintain usable condition. Soil and vegetation outside of the roadway will remain undisturbed.

UPDATED 6/17/2020 *Darren Anderson*

10. Termination and Restoration

The road is planned to remain open for the duration of the Right-of-Way (ROW). Disturbance on public lands outside of the ROW is not anticipated. If incidental disturbance outside of the ROW does occur, Carson City will reclaim any disturbance outside of the ROW to pre-construction conditions.

UPDATED 6/17/2020 *Darren Anderson*

Thanks for your attention on the matter.

Sincerely,

Darren Anderson, P.E.
Project Manager
Carson City Public Works
danderson@carson.org

Exhibit D:

BRUNSWICK CANYON ROAD REPAIR FEMA FLOOD PROJECT CARSC36

CARSON CITY, NEVADA
PROJECT FL0014

add
section
township
and
range

BOARD OF SUPERVISORS

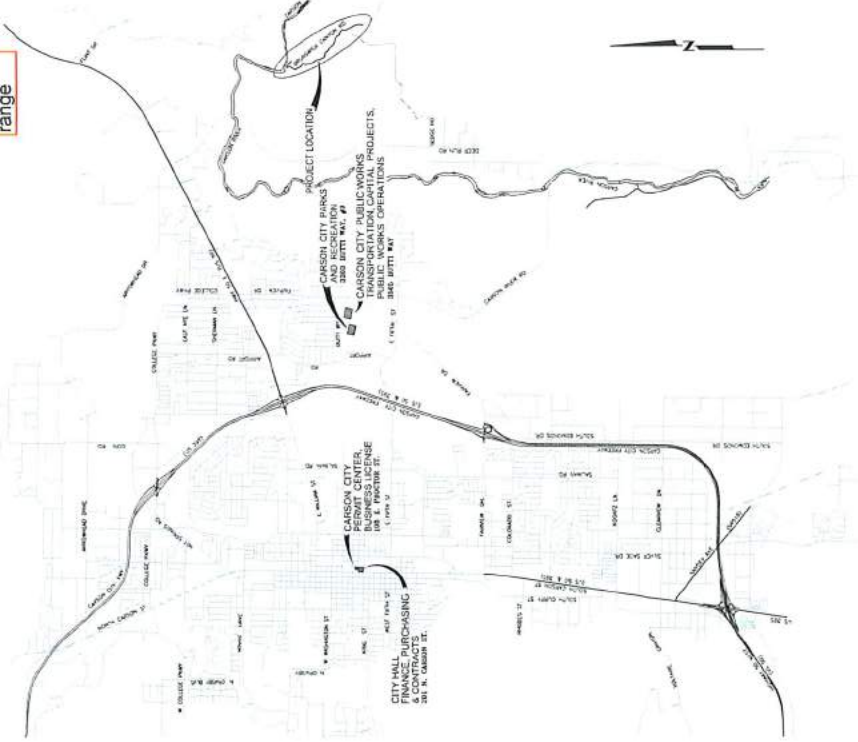
Robert Crowell Mayor
Stacey Glami Supervisor
Brad Bonkowski Supervisor
Lori Bagwell Supervisor
John Barretta Supervisor
Aubrey Rowlett City Clerk

DESIGNED FOR:

CARSON CITY PUBLIC WORKS DEPARTMENT
OPERATIONS DIVISION
3505 BUTTI WAY
CARSON CITY, NV 89701
887-2355

SHEET INDEX

- C1 TITLE SHEET
- C2 OVERALL SITE PLAN AND CROSS SECTIONS
- C3 SITE PLAN 1
- C4 SITE PLAN 2



VICINITY MAP
N.T.S.

NO.	REVISION	DATE	STANDARD	LOCAL	FOR	PUBLIC WORKS CONSTRUCTION	SECTION
1		10/12/17					BRUNSWICK CANYON ROAD REPAIR FEMA FLOOD PROJECT CARSC36 PROJECT NO. FL0014
GENERAL NOTES							
<p>1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>2. ALL EXISTING UTILITIES AND STRUCTURES SHALL BE MAINTAINED AND PROTECTED THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>3. THE CONTRACTOR SHALL OBTAIN NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>4. THE CONTRACTOR SHALL CALL THE CARSON CITY UTILITIES DEPARTMENT (887-2355) TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION TO OBTAIN NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>7. THE APPROVED PLAN, PERMIT AND INSPECTION RECORDS MUST BE ON THE JOB SITE AT ALL TIMES.</p> <p>8. PLAN APPROVAL FOR PERMITS AND INSPECTION RECORDS MUST BE ON THE JOB SITE AT ALL TIMES.</p> <p>9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p> <p>14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING NECESSARY PERMITS AND THE STANDARD CONTRACT FOR PUBLIC WORKS CONSTRUCTION (FORMS AS ADOPTED BY CARSON CITY) PRIOR TO THE START OF CONSTRUCTION.</p>							



DESIGNED BY: DA	CHECKED BY: RL	DWG NO.: 171813	SCALE (VERT): XX	POST DATE: 11/18/17
CARSON CITY PUBLIC WORKS DEPARTMENT	3505 BUTTI WAY CARSON CITY, NEVADA 89701	FAX: 887-2355		

REV	DATE	DESCRIPTION	BY	APP'D

TITLE SHEET	
BRUNSWICK CANYON ROAD REPAIR	
FEMA FLOOD PROJECT CARSC36	
PROJECT NO. FL0014	

90% PLANS - NOT FOR CONSTRUCTION

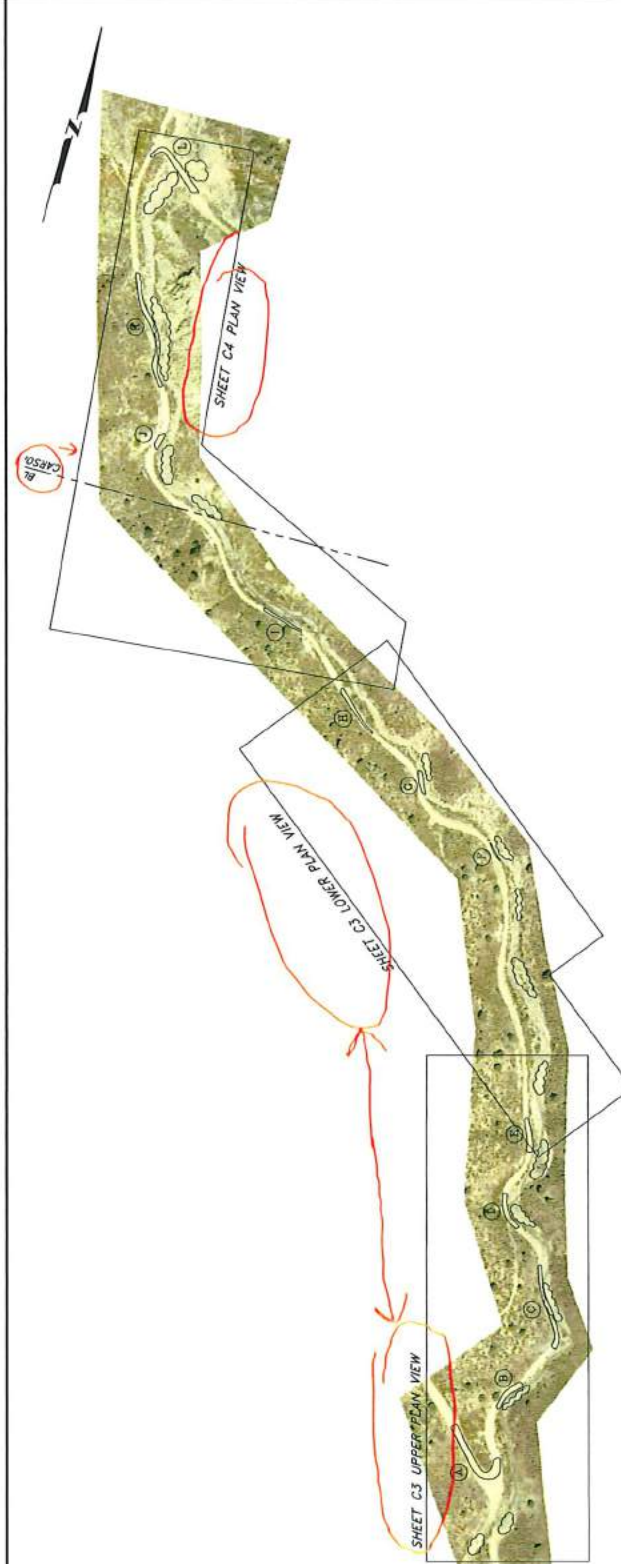
DESIGNED BY: DA
 DRAWN BY: CA
 CHECKED BY: RT, DS
 LMC NO.: 100-100-000
 SCALE (HORZ): NTS
 SCALE (VERT): H/A
 PLOT DATE: 12/3/19

CARSON CITY PUBLIC WORKS DEPARTMENT
 3505 80TH WAY CARSON CITY, NEVADA 89701
 PH: 867-2555 FAX: 867-2112

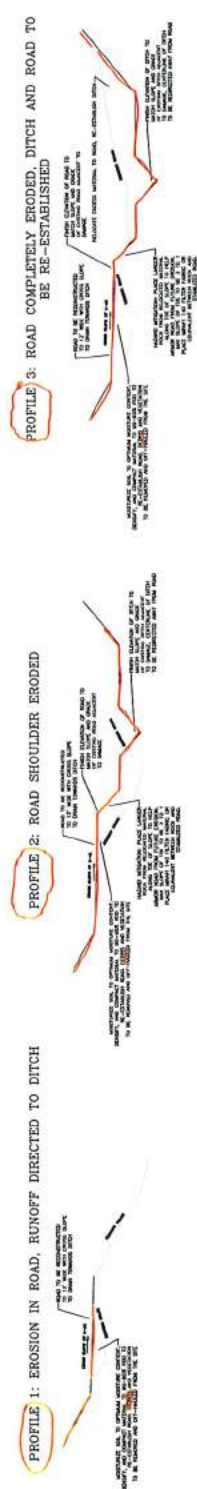
REV	DATE	DESCRIPTION	BY	APP'D

BRUNSWICK CANYON ROAD REPAIR
 FEMA FLOOD PROJECT CARSC36
 PROJECT No. F10014
OVERALL SITE PLAN & CROSS SECTIONS

SHEET **C2** OF 4



SECTIONS?
ROAD PROFILES



LEGEND

- AVAILABLE FILL MATERIAL
- REPAIR AREA
- DAMAGE LOCATION (A)

DESIGNED BY: DA CHECKED BY: MF, ST DATE: 11/18/19		CARSON CITY PUBLIC WORKS DEPARTMENT 5505 BERTI WAY CARSON CITY, NEVADA 89701 PH: 887-2355 FAX: 887-2112		BRUNSWICK CANYON ROAD REPAIR FEMA FLOOD PROJECT CAR36 PROJECT NO. F10014 SITE PLAN 1		SHEET C3 OF 4
REV	DATE	DESCRIPTION	BY	APP'D		



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BRUNSWICK CANYON ROAD REPAIR FEMA FLOOD PROJECT CARSC36 PROJECT No. F10014 SITE PLAN 2		SHEET C4 OF 4
DESIGNED BY: DA CHECKED BY: EF, DE DATE: 11/18/19	CARSON CITY PUBLIC WORKS DEPARTMENT 2505 BURT WAY CARSON CITY, NEVADA 89701 PH: 887-2355 FAX: 887-2112	REV. DATE DESCRIPTION BY APP'D



LEGEND

- AVAILABLE FILL MATERIAL
- REPAIR AREA
- DAMAGE LOCATION



Exhibit E:

N-35677

new

N

38823

BUR OF LAND MANAGEMENT
CARSON CITY DIST OFFICE

MAR 12 3 25 PM '82

CARSON CITY, NEVADA

SUPPLEMENT TO
COMPREHENSIVE WATER PLAN

November 12, 1981

Prepared By:

Vasey Engineering Company, Inc; John Carollo Engineers;
Boyle Engineering Corporation; Harper-Owes; a Joint Venture

CHAPTER II

DESCRIPTION OF ALTERNATIVE

This chapter describes how the Mexican Ditch lands and the alternative dam sites would be incorporated into an overall wastewater treatment and disposal plan to meet the City's needs for the year 2000. The alternative is developed with respect to the BASIS OF EVALUATION outlined beginning on Page IX-1 of the Comprehensive Water Plan (CWP). The detailed irrigation and dam site investigation discussed in Chapter I have also been incorporated into this work.

TREATMENT

The existing treatment plant would be expanded to meet the year 2000 peak month flow of 6.83 million gallons per day. It would provide a secondary treatment level. Disinfected effluent could be used to irrigate the golf course, landscaping, pasture lands (beef and dairy cattle), and fodder crops.

A process flow schematic is shown on Figure II-1. This schematic is identical to that presented for viable Alternatives S-I-4 and S-W-1. The wastewater would enter the plant from the existing Fifth Street Interceptor and the North Lift Station. The North Lift Station would be upgraded in capacity and rehabilitated as discussed in Chapter V of the CWP.

PRELIMINARY TREATMENT. The flow would first be given preliminary treatment consisting of metering, comminution, and grit removal. A Parshall flume would be provided for metering the wastewater flow. Rags and other large solids would be ground by comminutors, and the shredded

solids would be subsequently removed in the primary clarifiers. Finally, grit would be removed in an aerated grit chamber. The dewatered grit would be hauled to the landfill for disposal as presently done.

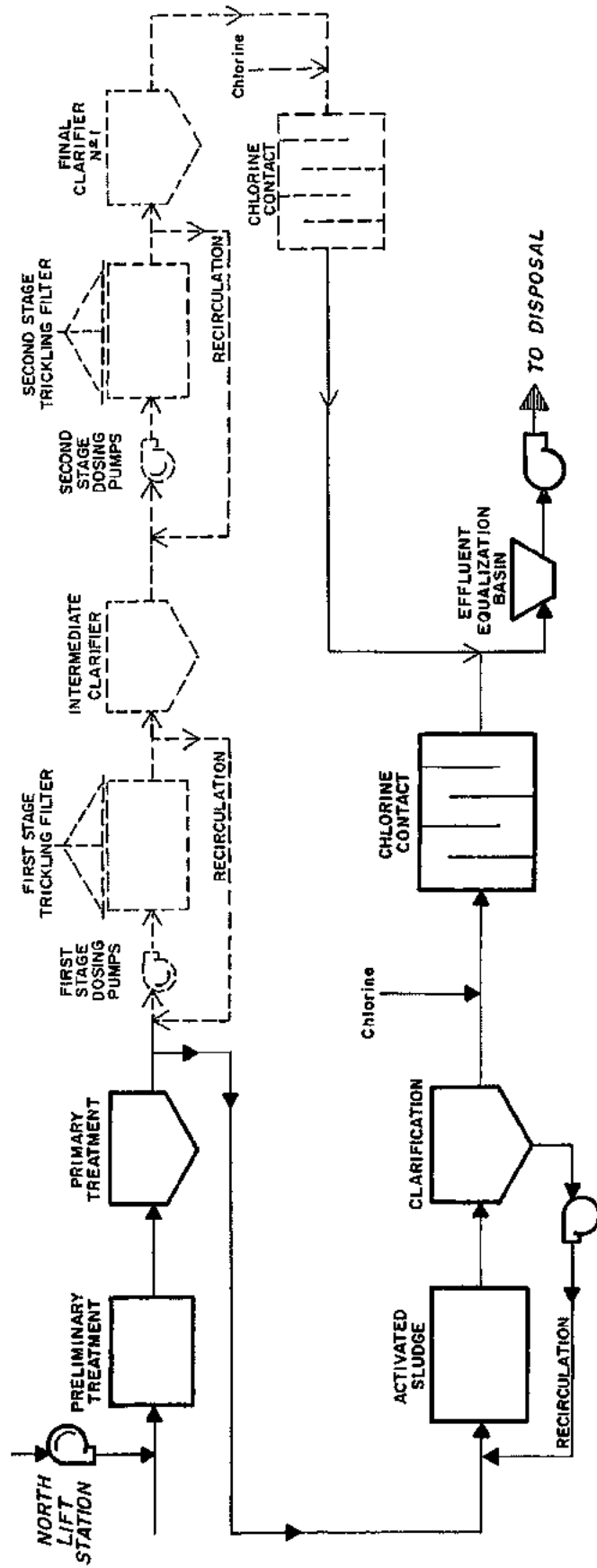
PRIMARY TREATMENT. The next process would be primary clarification. The existing circular clarifier would be incorporated into the flow scheme and additional clarifiers would be needed. New sludge pumping facilities would be constructed also.

SECONDARY TREATMENT. Biological secondary treatment would consist of the existing trickling filters operated in parallel with an activated sludge process. The two-stage trickling filters would be operated as originally constructed, and Final Clarifier No. 1 would be reconverted from its present use as an activated sludge clarifier to settle the effluent from the second stage filter. The flow through the trickling filters will be limited to 2.0 MGD. The expected effluent quality will range from 30 to 40 mg/l of both Biochemical Oxygen Demand and Suspended Solids.

The remaining flow would be treated by an activated sludge process. The existing aerated pond might be incorporated into the flow scheme. Final Clarifier No. 2 will be used. Additional clarifiers and new sludge pumping facilities are needed. Expected effluent quality would meet secondary treatment levels.

The final combined effluent will be disinfected with chlorine. The contact time in the effluent pipeline and contact basins combined will provide at least 60 minutes detention time.

SOLIDS HANDLING. The primary and waste activated sludge would be anaerobically digested to reduce the potential for flies, odors, and



CARSON CITY
Comprehensive Water Plan
PROCESS FLOW SCHEMATIC

FIGURE H - 1

11-7

other nuisances from occurring. Prior to digestion, the waste activated sludge would be concentrated in a dissolved air flotation thickener. The digested sludge would be mechanically dewatered. Dried sludge could be recycled as a soil amendment or disposed of at the landfill.

OTHER FACILITIES. Other cost items would include rehabilitation of existing units, a new operations building, and a standby power generator. An intermediate pump station may be required based on results of a detailed hydraulic analysis done during the design phase. Rehabilitation items are detailed in the CWP.

DISPOSAL

The treated effluent would flow into an equalization basin and would be pumped either to a storage reservoir or the irrigation sites. The equalization basin could also be located following primary treatment to help improve the efficiencies of the downstream biological treatment processes. This concept will be evaluated during design.

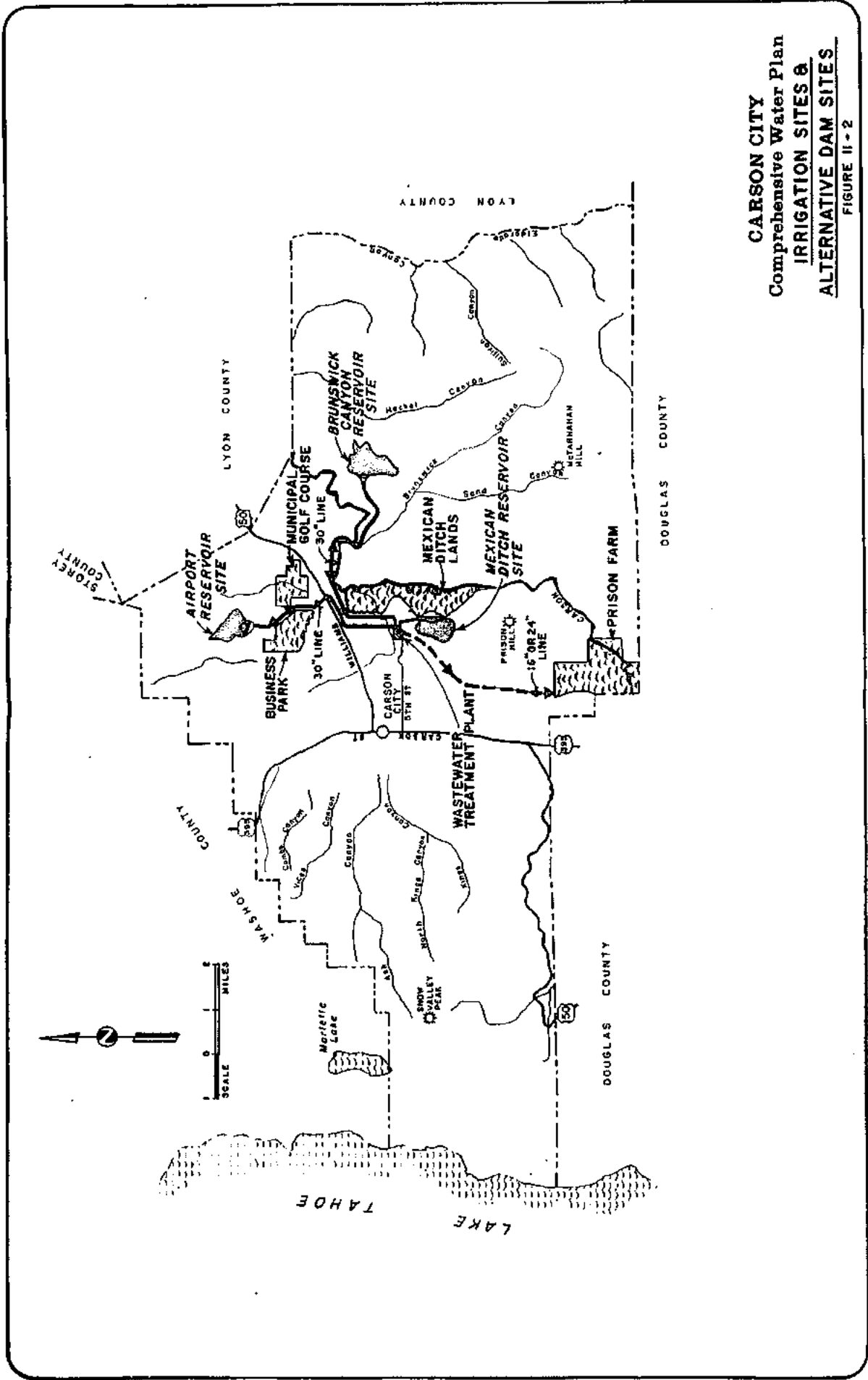
Three alternative reservoir and dam sites have been evaluated. These sites, the airport, Mexican Ditch, and Brunswick Canyon sites with their respective piping layouts and irrigation sites are shown on Figure II-2. Each site would have an impoundment volume of approximately 3,500 acre-feet. The airport and Brunswick Canyon site would be high enough in elevation to provide gravity flow to all irrigation lands. For the Mexican Ditch reservoir site, the effluent to the Mexican Ditch lands could be delivered through the ditch by gravity. For any other area, the water from the Mexican Ditch reservoir site would need to be pumped from the reservoir to the site by an additional pump station.

The treated effluent would be used to irrigate the Mexican Ditch lands, the Prison Farm, the existing golf course plus an 18-hole expansion, and the planned business park north of the airport as shown on Figure II-2. The irrigated areas and amount of water applied to each are given in Chapter III. The basis for the application rates shown is discussed in Chapter III also.

The Mexican Ditch would be used to deliver the effluent to the Mexican Ditch lands. Ridge and furrow irrigation would be used. The tailwater would be collected and returned to the ditch to prevent runoff from entering the Carson River. Some land leveling and improvements to the existing distribution systems will be needed. The lands would be used primarily for irrigated pasture.

The Prison Farm will be irrigated by a combination of both ridge and furrow and sprinkler irrigation. Some areas will require sprinklers because of a combination of land slope and soil type.

The existing reuse line and pump station to the golf course will be incorporated into the plan for the Mexican Ditch and Brunswick Canyon dam sites. For the site north of the airport, the treated effluent could be supplied directly from the reservoir. This concept would be evaluated in detail during the design phase.



CARSON CITY
 Comprehensive Water Plan
IRRIGATION SITES &
ALTERNATIVE DAM SITES
 FIGURE II - 2

II-5

CHAPTER V

DESCRIPTION OF REVISED PLAN

INTRODUCTION

This Chapter describes the proposed wastewater plan for Carson City through the year 2000. Staging of the facilities is discussed in Chapter VII. The recommended plan includes water conservation as outlined beginning on Page XI-10 of the Comprehensive Water Plan (CWP).

WASTEWATER TREATMENT

The existing wastewater treatment plant will be expanded and rehabilitated to treat the expected flows and loadings as summarized on Table IX-1 of the CWP. The facilities will provide a secondary treatment level, and the effluent will be disinfected with chlorine. A description of the treatment facilities is given in Chapter II of this document. The flow schematic is given on Figure II-1. Sizing criteria for the treatment facilities is presented on Table V-1, and a plant layout is shown on Figure V-1.

DISPOSAL

The treated effluent will be pumped to a reservoir located adjacent to Brunswick Canyon as shown on Figure II-2. A homogeneous earthfill dam, using on-site native materials will be constructed. The effluent will be stored during the non-irrigation season. During the summer, the treated and stored effluent will be used to irrigate sites as summarized on Table V-2. No discharge would leave any of the sites, as tailwater

TABLE V-1
 APPARENT BEST WASTEWATER ALTERNATIVE
 PRELIMINARY DESIGN CRITERIA
 (YEAR 2000)

Treatment Process	Sizing Criteria
1. Preliminary Treatment	
a. Grit Removal	
1. Type	Aerated-spiral flow
2. Detention Time @ 6.83 MGD	3.5 min.
b. Coarse Solids Handling	
1. Type	Grinding & Standby Manual Screen
2. Number of Units	2 + standby screen
3. Capacity, each	6.83 MGD
2. Primary Treatment	
a. Overflow Rate @ 6.83 MGD	< 800 gpd/sf
b. Number of Units	3
c. Capacity, Existing Unit	1.84 MGD
d. Capacity, New Units, Each	3.63 MGD
3. Existing Trickling Filters	
a. Type	Two Stage
b. Capacity	2.0 MGD
c. First Stage Filter Organic Loading	145#/BOD/Day/1000 cf
d. First Stage Filter Hydraulic Loading	453 gpd/sf
e. Intermediate Clarifier Overflow Rate	840 gpd/sf
f. Second Stage Filter Organic Loading	50#/BOD/Day/1000 cf
g. Second Stage Filter Hydraulic Loading	508 gpd/sf
h. Second Stage Clarifier Overflow Rate	460 gpd/sf

TABLE V-1 (Continued)
 APPARENT BEST WASTEWATER ALTERNATIVE
 PRELIMINARY DESIGN CRITERIA

Treatment Process	Sizing Criteria
4. Activated Sludge	
a. Hydraulic Detention Time	≥ 6 Hours
b. Number of Clarifiers	3
c. Overflow Rate	600 gpd/sf
d. Capacity, Existing Unit	2.97 MGD
e. Capacity, New Units, Each	2.50 MGD
5. Disinfection	
a. Hydraulic Detention Time @ 6.83 MGD (Pipeline detention time will be included)	60 Minutes
6. Anaerobic Digestion	
a. Solids Loading	0.1#VSS/1000 cf/day
b. Hydraulic Detention Time	20 Days
7. Dissolved Air Flotation	
a. Solids Loading	1#/sf/hr.
b. Operation Time	8 hrs/day

TABLE V-2
SUMMARY OF DISPOSAL SITES

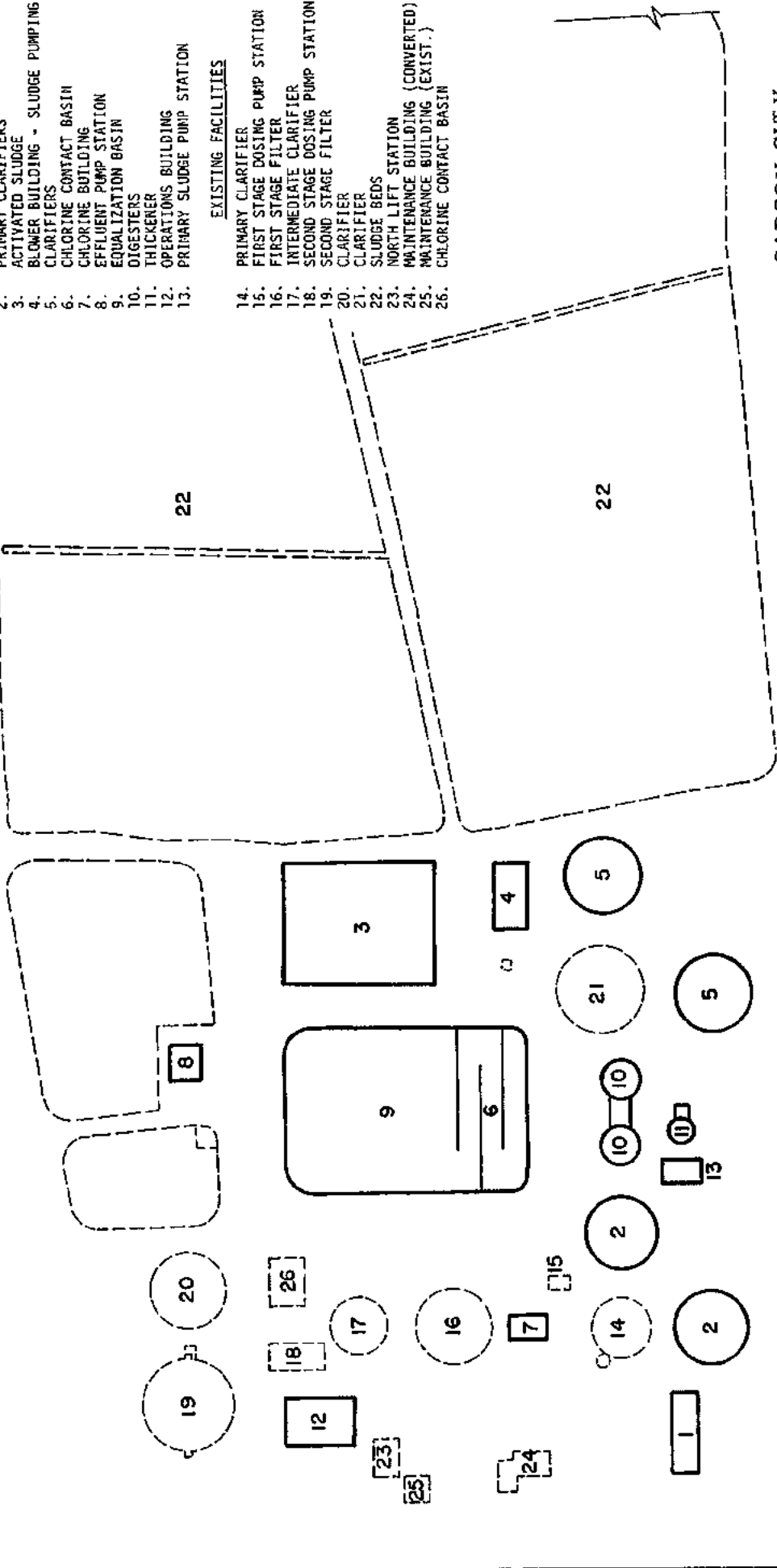
Site	Area to be Irrigated (acres)	Yearly Application (acre-feet)	Crop	Irrigation System
Mexican Ditch Lands	945	3,357	Feed, fodder, pasture	Ridge and furrow
Golf Course	200	994	Turf	Sprinkler
Business Park	160	795	Turf, ornamentals	Sprinkler
Prison Farm	<u>461</u>	<u>2,096</u>	Feeder, fodder, pasture	Sprinkler, ridge and furrow
	1,766	7,242		

NEW FACILITIES

1. PRELIMINARY TREATMENT
2. PRIMARY CLARIFIERS
3. ACTIVATED SLUDGE
4. BLOWER BUILDING - SLUDGE PUMPING
5. CLARIFIERS
6. CHLORINE CONTACT BASIN
7. CHLORINE BUILDING
8. EFFLUENT PUMP STATION
9. EQUALIZATION BASIN
10. DIGESTERS
11. THICKENER
12. OPERATIONS BUILDING
13. PRIMARY SLUDGE PUMP STATION

EXISTING FACILITIES

14. PRIMARY CLARIFIER
15. FIRST STAGE DOSING PUMP STATION
16. FIRST STAGE FILTER
17. INTERMEDIATE CLARIFIER
18. SECOND STAGE DOSING PUMP STATION
19. SECOND STAGE FILTER
20. CLARIFIER
21. CLARIFIER
22. SLUDGE BEDS
23. NORTH LIFT STATION
24. MAINTENANCE BUILDING (EXIST.)
25. MAINTENANCE BUILDING (EXIST.)
26. CHLORINE CONTACT BASIN



CARSON CITY
 Comprehensive Water Plan
 PROPOSED LAYOUT - YEAR 2000
WASTEWATER TREATMENT FACILITIES
 FIGURE V - 1

V-4

return systems will be constructed at the Mexican Ditch and Prison Farm. A further description is given in Chapter II.

PIPELINE. An effluent pipeline would be constructed to convey treated wastewater approximately 27,300 feet to the storage reservoir located northeast of Brunswick Canyon. The pipeline would be a 30-inch diameter ductile-iron pipe to convey stored effluent from the reservoir to the irrigation sites sized for peak irrigation demands.

The pipeline route would parallel the Mexican Ditch from the flume located in the ditch to New Empire. Cost savings may be realized by locating the pipeline in the Mexican Ditch and supplying water users directly from the pipeline. Detailed analysis conducted during design studies would evaluate this alternative.

The pipeline route would parallel the Carson River to the bridge crossing near the Brunswick Mill ruins. The old Virginia-Truckee Railroad grade would be utilized to a river crossing near the bridge. The pipeline would be located on the south of the river from the bridge to the canyon leading to the dam and storage reservoir.

The pipeline would have stubs located at points where effluent would be diverted for irrigation. Diversion points would be provided for irrigating the existing golf course and planned expansion and the planned business park.

IMPLEMENTATION SCHEDULE

DESCRIPTION	1981	1982	1983	1984	1985	1986
(1) BOARD OF SUPERVISERS ADOPT REVISED PLAN	* (1)					
(2) PUBLIC HEARING	* (2)					
(3) SUBMIT FOR NEVADA DEP & A-95 CLEARING HOUSE REVIEW & APPROVAL	* (3)					
(4) APPLY FOR STEP 2 GRANT	* (4)					
(5) STEP 2 APPROVAL	* (5)					
(6) FACILITIES DESIGN		(6)				
(7) STATE DESIGN REVIEW		(7)				
(8) APPLY FOR STEP 3 GRANT		* (8)	* (8)	* (6)		
(9) ADVERTISE FOR BIDS		(9)	(9)	(9)		
(10) STEP 3 APPROVAL		* (10)	* (10)	* (10)		
(11) REVIEW BIDS & AWARD		(11)	(11)	(11)		
(12) CONSTRUCTION						(12)
(13) STARTUP & OPERATOR TRAINING				(13)		(13)
(14) NEW FACILITIES ON LINE				* (14)	* (14)	* (14)
(15) SUBMIT PLAN OF OPERATION	* (15)					
(16) UPDATE PLAN OF OPERATION				* (16)		
(17) SUBMIT DRAFT O&M MANUAL			(17)	(17)		
(18) FINALIZE O&M MANUAL				(18)		
(19) UPDATE REVENUE PROGRAM				(19)		
					PIPES	
					* (14)	
						RESERVOIR
						* (14)
						T2 TREATMENT

FIGURE VII-2

VII-16

TABLE VII-3
 ALTERNATIVE NO. 2
 SCHEDULING & FUNDING PLAN
 PRISON FARM IMPLEMENTED FIRST

ITEM	FY 82	FY 83	FY 84	FY 85	
Treatment Plant					
Preliminary Treatment		1.638			
Primary Clarification		1.051			
Secondary Clarifier				.580	
Return Sludge Pump Station				.884	
Disinfection				.889	
Dissolved Air Flotation				.451	
Anaerobic Digestion				1.762	
Operations Building		.938			
Emergency Power				.451	
Rehabilitation		.880			
Intermediate Pump Station		.745			
Site Work, Piping, Electrical, Bond & Mob, Painting		<u>1.497</u>		<u>1.430</u>	
Subtotal		6.749		6.447	
Contingency at 15%		<u>1.012</u>		<u>.967</u>	
Subtotal Treatment		7.761		7.414	
Disposal Facilities					
Equalization Basin		.246			
Effluent Pump Station		1.590			
Pipelines		1.708	4.105		
Reservoir			3.438		
Irrigation Improvements			<u>.801</u>		
Subtotal		3.544	8.344		
Contingency at 15%		<u>.532</u>	<u>1.252</u>		
Subtotal Disposal		<u>4.076</u>	<u>9.596</u>	<u>0</u>	
Total Construction		11.837	9.596	7.414	
Engineering					
Design	2.035				
Construction at 5%		<u>.592</u>	<u>.480</u>	<u>.371</u>	
Total Project Cost	2.035	12.429	10.076	7.785	32 225
Grant Share 75%	1.526	9.322	7.557	5.839	24 244
Local Share 25%	.509	3.107	2.519	1.946	8 011
Grant Share 75% of 1980 Flows	1.190	7.271	5.894	4.554	16 719
Local Share	.845	5.158	4.182	3.231	13 311

Notes:

- (1) All costs in millions of dollars.
- (2) Costs escalated to account for expected inflation.