

**Mountain Green Sewer
Improvement District**

MGSID

Sanitary Sewer Management Plan



**Approved
April 2, 2015**

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Introduction

Mountain Green Sewer Improvement District, aka MGSID, is a Special District established in Utah under the Utah State Code. MGSID was founded in 1976 and provides sewage collection and/or treatment to the community of Mountain Green within the designated borders of the Special District. This Sewer System Management Plan (SSMP) manual has been created to provide a plan and schedule to properly manage, operate, and maintain all parts of the sewer collection system to reduce and prevent Sanitary Sewer Overflows (SSO), as well as minimize impacts of any SSOs that occur. The Management for this entity recognizes the responsibility it has to operate the sewer system in an environmentally and fiscally responsible manner. As such, this manual will cover aspects of the collection system program necessary to provide such an operation. This manual may refer to other programs or ordinances and by reference may incorporate these programs into this manual.

There was no community sewer system in northern Morgan County until 1990. Before then sewage was treated by individual septic systems, a number of which began to fail because some of the soils in the Mountain Green community are not sufficiently porous. The situation prompted the Morgan County Government to declare a moratorium on new construction in the Mountain Green area and in 1976 the County created the Mountain Green Sewer Improvement District under what is now Utah Code Titles 17A and 17B. As an Independent Special Service District, it has the power to own property, establish sanitary sewer system regulations, impose a sewer tax on properties within the boundaries of the District, set the sewer impact fee for new construction, and require a monthly service fee for homes and businesses served by the sewer system.

The Sewer Improvement District (SID or District) is governed by a seven-member Board of Trustees. Board members are elected for terms of four years. For over twelve years, from 1976 to 1989, a number of community leaders serving on the Board struggled to gain support of home owners, obtain construction financing, procure a suitable treatment site and create a system design that would serve the existing community and allow renewed development within the area. Many homeowners and some landowners

resisted the efforts because they preferred the limitations on growth and their septic systems were paid for. Residents in the Rose Hill development even sponsored litigation to remove their 60-plus homes from the District entirely.

By 1989, financing had been arranged, a treatment plant site had been procured, a system design had been approved, a sufficient number of homeowners had agreed, and construction began. In late winter of 1989/90 the system was operational and billing began in June, 1990. The original system cost was over \$2,500,000 in 1989 dollars. The Board obtained over \$1,700,000 (68% of the total) in Federal, State and County funding and procured a twenty-year, zero-interest loan of \$570,000 (23% of the total) from the State. There were about 200 initial subscriptions in the community of \$900 each (\$180,000 or 7% of the total) that had been reduced to encourage immediate participation in the project. Thus, the cost to build the system amounted to about \$12,600 per residence then being served, while the homeowner was required to pay only \$900 initially (about \$1600 in 2010 dollars).

In 2008 the original lagoon system was updated with the addition of an aeration system that increased the service capacity to 1,800 Equivalent Residential Units (ERU). In the summer of 2014 a new 18" to 21" trunk line was installed to handle the increased flow from development on the east end of Mountain Green, and a Preliminary Engineering Report was created by Aqua Engineering for a mechanical plant that will both increase the wastewater processing capacity to 3,289 ERU's and meet the new state requirements to remove Phosphorus and Nitrogen down to set levels. We anticipate that the new plant will begin construction in 2018 in order to meet the state deadline to meet the new requirements by January 1, 2020.

Definitions

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

- 1) "BMP" means "best management practice".
- 2) "CCTV" means "closed circuit television.
- 3) "CIP" means a "Capital Improvement Plan".
- 4) "DWQ" means "the Utah Division of Water Quality".
- 5) "FOG" means "fats, oils and grease".
 - a. This is also referred to as a Grease Oil and Sand Interceptor Program (GOSI).
- 6) "I/I" means "infiltration and inflow".
- 7) "Permittee" means a federal or state agency, municipality, county, district, and other political subdivision, such as MGSID, of the state that owns or operates a sewer collection system or who is in direct responsible charge for operation and maintenance of the sewer collection system. When two separate federal or state agencies, municipality, county, district, and other political subdivision of the state are interconnected, each shall be considered a separate Permittee.
- 8) "SECAP" means "System Evaluation and Capacity Assurance Plan".
- 9) "Sewer Collection System" means a system for the collection and conveyance of wastewaters or sewage from domestic, industrial and commercial sources. The Sewer Collection System does not include sewer laterals under the ownership and control of an owner of real property, private sewer systems owned and operated by an owner of real property, and systems that collect and convey stormwater exclusively.
- 10) "SORP" means "Sewer Overflow Response Plan"
- 11) "SSMP" means "Sewer System Management Plan".
- 12) "SSO" means "sanitary sewer overflow", the escape of wastewater or pollutants from, or beyond the intended or designed containment of a sewer collection system.
- 13) "Class 1 SSO" (Significant SSO) means an SSO or backup that is not caused by a private lateral obstruction or problem that:
 - a. affects more than five private structures;
 - b. affects one or more public, commercial or industrial structure(s);
 - c. may result in a public health risk to the general public;
 - d. has a spill volume that exceeds 5,000 gallons, excluding those in single private structures; or
 - e. discharges to Waters of the State of Utah.
- 14) "Class 2 SSO" (Non-Significant SSO) means a SSO or backup that is not caused by a private lateral obstruction or problem that does not meet the Class 1 SSO criteria.
- 15) "USMP" means the "Utah Sewer Management Program".

General SSO Requirements

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

- 1) *The permittee shall take all feasible steps to eliminate SSOs to include:*
 - a. *Properly managing, operating, and maintaining all parts of the sewer collection system;*
 - b. *training system operators;*
 - c. *allocating adequate resources for the operation, maintenance, and repair of its sewer collection system, by establishing a proper rate structure, accounting mechanisms, and auditing procedures to ensure an adequate measure of revenues and expenditures in accordance with generally acceptable accounting practices; and,*
 - d. *providing adequate capacity to convey base flows and peak flows, including flows related to normal wet weather events. Capacity shall meet or exceed the design criteria of R317-3.*

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

- 3) *When an SSO occurs, the permittee shall take all feasible steps to:*
 - a. *control, contain, or limit the volume of untreated or partially treated wastewater discharged;*
 - b. *terminate the discharge;*
 - c. *recover as much of the wastewater discharged as possible for proper disposal, including any wash down water; and,*
 - d. *mitigate the impacts of the SSO.*

SSO Reporting Requirements

R317-801 stipulates when and how SSO's are reported. Following are those reporting requirements as of 04/23/2012.

- 1) **SSO REPORTING.** *SSOs shall be reported as follows:*
 - a. *A Class 1 SSO shall be reported orally within 24 hours and with a written report submitted to the DWQ within five calendar days. Class 1 SSO's shall be included in the annual USMP report.*
 - b. *Class 2 SSOs shall be reported once a year in the USMP annual report.*

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

I. General Information

This Sanitary Sewer Management Plan was adopted by the Board of Trustees for the Mountain Green Sewer Improvement District on April 2, 2015.

Telephone Number and Contacts

The District telephone number and the responsible representatives with titles for the Mountain Green Sewer Improvement District with regard to this SSMP are:

District office telephone number: **801-876-3416**

Robert Volk, Manager

Janet Boudrero, Secretary

Jim Wixom, Lead Operator

Dennis Baldwin, Relief Operator

Open, Administrative Assistant

Open, Seasonal Assistant

Description of Roles and Responsibilities

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

Board of Trustees

The seven member Board of Trustees is responsible for reviewing and approving all policies and major budgetary considerations involved in running the District.

Manager

This individual is responsible for overall day to day management of MGSID, including all aspects of administration, operations and budget. The Manager's responsibilities include following and administering the directives set forth by the Board of Trustees and then advising them on the status of all aspects regarding MGSID performance.

The Manager has the responsibility to assure efficient and safe operation the sewer system, plant operations and administration. The Manager delegates responsibilities to the Office Secretary and the Lead Operator, and oversees the supervision of all staff, expenditures, revenues and budget. The Manager is responsible for the overall coordination of training, emergency response, maintenance and repair activities, advance planning, development and capital improvements, monitoring, reporting and compliance, mapping and maintenance of the SECAP program.

Office Secretary

The Office Secretary is responsible for running the administrative side of MGSID and reports directly to the Manager. The Office Secretary handles the day to day bookkeeping, accounting, reporting, correspondence, billing, collections, filing and customer service, and is responsible for the supervision of the Administrative Assistant.

Administrative Assistant

This individual works under the supervision of the Office Secretary to assist with any administrative duties that require assistance and to fill in when the Office Secretary is not available.

Lead Operator

The Lead Operator reports directly to the Manager and is responsible for coordinating maintenance, repairs and operation of all equipment at MGSID as well as daily system monitoring and data entry. The Lead Operator is also responsible for the coordination of all landscape maintenance, snow removal and the supervision of the Relief and Seasonal Operators when the Manager is not available.

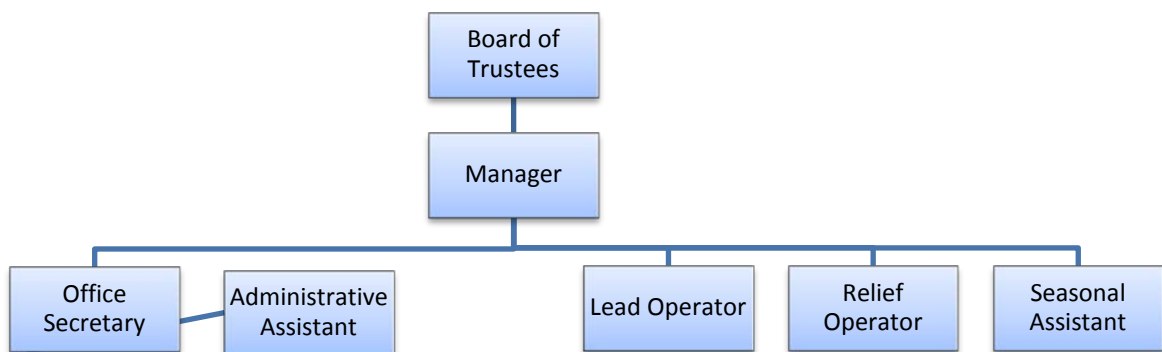
Relief Operator

The Relief Operator fills in and supports the Lead Operator for weekends, holidays, vacation and sick days or whenever the Lead Operator is not available. The relief Operator should be capable of handling all normal daily Operator duties.

Seasonal Assistant

The Seasonal Assistant works during the spring to fall period to assist both the Manager and Operators in the tasks of manhole and line inspections, weeding and weed spraying, landscape maintenance and assorted other tasks.

MGSID ORGANIZATION CHART



II. Operations and Maintenance Program

MGSID has established this sanitary sewer system operations and maintenance program to ensure proper system operations, to minimize any basement backups or SSOs, and to provide for replacement, refurbishment, or repair of damaged or deteriorated piping systems. The combined maintenance program should insure that the environment and health of the public are protected at a reasonable cost for the end users. To this end, the following areas are described and included in this maintenance program:

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

System Mapping

An up-to-date map is essential for effective system operations. MGSID has assigned the mapping responsibility to the Manager who will prepare and maintain current mapping for the entire sanitary sewer system. Mapping may be maintained on either paper or in a graphical information system (GIS) or a combination of both. Current mapping is available at the following location:

- MGSID office on the Manager's computer in an AutoCAD Lite file

Should any employee identify an error in the mapping, they should document the error on a defect report and give it to the Manager.

System Cleaning

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

- Contractor Hydraulic Cleaning by ProPipe or Twin D
- Contractor Mechanical Rodding by ProPipe or Twin D
- Chemical Root Control
- Chemical FOG Control

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

System CCTV Inspection

Closed Circuit TV inspections of the sanitary sewer system are used to assess pipe condition and identify problems or possible future failures which need current attention. The CCTV process also identifies the piping condition to allow for replacement prior to failure. Generally MGSID will conduct CCTV inspection with the independent contractor, ProPipe or Twin D. These CCTV inspections will concentrate on lines where visible concerns have been noted during manhole inspections and move across alternating sections of the District every year to coincide with the system cleaning, with the intention of covering all of the major locations across the District every three years. This inspection frequency is based on the pipe aging process. As such, once the system has been inspected, change usually occurs gradually. CCTV will also be employed when a systems operation or capacity is questioned or when an SSO occurs. Any defects identified during the CCTV process should be reported on a Defect Report Form and the form should be given to the Manager for possible repairs. Documentation of CCTV activities will be maintained at the MGSID office. When contractors are employed to inspect the sanitary sewer system they will be required to submit records for their work. The Manager will prepare an annual summary of CCTV completed for that calendar year.

Pump Station/Pressure Line Inspection

Staff inspects each pump station at least weekly for correct operations. Included in this inspection is a visual check of the wet-well and a test of the of the backup generator. Pump stations are monitored daily via SCADA equipment through a graphic computer display located in our plant control room. Operators inspecting the pump stations will record their findings in the control room database. Should a problem be encountered

that cannot be corrected during the inspection, a Defect Report Form should be completed and the form given to the Manager. If the defect has the potential to cause a sanitary sewer overflow, immediate action should be taken to insure no overflow occurs. During the inspection of the pressure sewer alignment, operators should be looking for unusual puddles. If a potential leak is identified, a Defect Report should be completed and given to the Manager for further action. An evaluation will be made to determine if there is an actual leak and appropriate action taken.

Manhole Inspection

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

Defect Reporting

Defect Reports generated through the cleaning, CCTV inspection, pump station inspection or manhole inspection programs will be prioritized for correction by the Manager. Any defects which have the potential for catastrophic failure and thus create a sanitary sewer overflow should be evaluated immediately and discussed with the Manager for repair. Repair methods may include:

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

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

Collection System Damage

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

Damage Identification

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

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

- 1) Collections Maintenance Activities
- 2) CCTV Inspection Activities
- 3) Manhole Inspection Activities

These three activities are discussed in this Maintenance Program and the identification of damage will result in the generation of a Defect Report. Generally, damage identification is an iterative and continuous process.

External activities which identify damages include:

- 1) Contractor Notification of Damage
- 2) Directional Drilling Notification of Damage
- 3) Public Damage Complaints

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

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

Damage Response Actions

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

1) Stable Damage

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

2) Unstable Damage

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

3) Immediate Damage

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

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

III. Design Standards

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

Sewer Use Ordinance

MGSID has a sewer use ordinance that has been adopted by the governing body. This ordinance contains the following items as stipulated by Utah State Code R317-801:

See following for full MGSID Sanitary Sewer Ordinance

- Prohibition on unauthorized discharges,
- Requirement that sewers be constructed and maintained in accordance with R317-3,
- Ensures access or easements for maintenance, inspections and repairs,
- Has the ability to limit debris which obstruct or inhibit the flow in sewers such as foreign objects or grease and oil,
- Requires compliance with pretreatment program,
- Allows for the inspection of industrial users, and
- Provides for enforcement of for ordinance or rules violations.

The following elements are included in this SSMP:

- General Information
- Operations and Maintenance Program
- Sewer Design Standards
- Sanitary Sewer Overflow Response Plan
- Grease, Oil and Sand Interceptor Management Program
- System Evaluation and Capacity Assurance Plan
- SSMP Monitoring and Measurement Plan
- Sewer System Mapping Program

This program is intended to provide guidance and is not intended to be part of a regulatory requirement. As such, failure to strictly comply with documentation requirements is not a failure of the program's effectiveness. Documentation failures are

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

MGSID SANITARY SEWER ORDINANCE
Updated January 15, 2015

ARTICLE I – DEFINITIONS

Unless the context specifically indicates otherwise, the meaning of terms used in this Ordinance shall be as follows:

"Apartment, Accessory." A separate dwelling unit that is located within and subordinate to a single family detached dwelling.

"Backflow Preventer." A device designed to prevent backflow of wastewater into the home. The design of new homes shall include provisions for the installation and maintenance of a backflow preventer. If the homeowner elects to not install a backflow preventer, then that homeowner shall sign a form releasing the District of all liability in case of a backflow of wastewater into the home.

"Bed and Breakfast." A business establishment having nine (9) or fewer guest rooms in which lodging is offered to guests for compensation and meals may be offered for compensation only to the lodgers.

"BOD" (denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the biochemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20 degrees Celsius, expressed in milligrams per liter.

"Board of Trustees." The duly elected or appointed Board of Trustees of the Mountain Green Sewer Improvement District.

"Building." Any structure arranged, designed, intended or used for the shelter, housing or enclosure of persons, animals, processes, equipment or property of any kind.

"Building Drain." That part of the lowest horizontal piping of a drainage system that receives the discharge of waste and other drainage pipes inside walls of the building and conveys it to the building sewer. The building drain extends eight (8) feet outside the inner face of the building wall.

"Building Sewer" or "Building Connection" is the extension from the building drain to the public sewer or other place of disposal, also sometimes referred to as the "house connection" or "lateral".

"Campground." A business establishment operated as a recreational site for tents, trailers, recreational vehicles or other forms of temporary shelter.

"Change of Use." The change from an existing use to another use, including without limitation, the addition of a new use to an existing use.

"Church." A building or group of buildings arranged, designed, intended or used for the conduct of religious services, and accessory uses associated therewith.

"Club." Any voluntary association of persons organized for fraternal, social, religious, benevolent, recreational, literary, patriotic, scientific, or political purposes whose facilities are open to members but not the general public, and which is principally engaged in activities that are not customarily carried on for pecuniary gain.

"Combined Sewer." A sewer intended to receive both wastewater and storm or surface water. There are no combined sewers in the District.

"Company." Any industrial or commercial establishment with a liquid waste discharge.

"Contractor." A firm or individual licensed and qualified to perform services for others as specified within a contract.

"District." Shall mean the Mountain Green Sewer Improvement District, a body politic of the State of Utah, created within the provisions of Title 17, Chapter 6, Utah Code Annotated (1953), as amended.

" Dwelling." Any building or structure or portion thereof containing one (1) or more dwelling units, but not including a motel, hotel, inn, or similar unit.

- A. Single-Family Dwelling – A building designed or intended to be used exclusively for residential occupancy by one family only and containing only one (1) dwelling unit, or one dwelling with an accessory apartment as permitted by the Morgan County Land Use Ordinance. A single-family dwelling and any accessory apartment located therein shall be constructed on one continuous foundation and under one continuous roof; no part of the dwelling unit shall be located in a detached building or structure.
- B. Two Family Dwelling – A building designed or remodeled to be used exclusively for residential occupancy by two (2) families living independently of one another and containing two (2) dwelling units. Each unit shall have not less than 650 square feet. The dwelling shall have only one (1) front entrance, and all other entrances shall be on the side or in the rear of the dwelling. An entrance leading to a foyer with entrances leading from the foyer to the two (2) dwelling units is permitted. One dwelling shall be subordinate in size. The subordinate unit shall not be permitted a Home Occupation. A two family dwelling shall be constructed on one continuous foundation and under one continuous roof; no part of the dwelling unit shall be located in a detached building or structure.
- C. Multiplex Dwelling – A building designed or intended to be used exclusively for residential occupancy by three (3) or more families living independently of one another and containing three (3) or more dwelling units, including apartment

buildings and condominiums, but excluding single-family dwellings with an accessory apartment permitted by the Morgan County Land Use Ordinance.

"Dwelling Unit." One or more habitable rooms arranged, designed or intended to be used, or used as a complete housekeeping unit for one or more individuals living together as a family with independent living, cooking, sleeping, bathing and sanitary facilities.

"Easement." An acquired legal right for the specific use of land owned by others.

"External Drain." An arrangement of piping intended to collect roof water, garage floor water, surface or subsurface water and to carry it away from the foundation of a building. An external drain shall NOT be connected to the sanitary sewer.

"Floatable Oil." Oil, fat or grease in a physical state such that it will separate by gravity from wastewater by treatment in an approved pretreatment facility. Wastewater shall be considered free of floating oil if it is properly pretreated and the wastewater does not interfere with the collection system.

"Foundation." The supporting substructure of a building or other structure including but not limited to basements, slabs, posts or frost walls.

"Frontage on the Sewer" shall exist if the public sewer line passes between the side lot lines of the property in question, as determined by drawing perpendicular lines across the roadway from the points of intersection of the property side lot lines.

"Garbage." Solid waste from the domestic and commercial preparation, cooking, and dispensing of food, and from the handling, storage, and sale of produce.

"Garbage, Properly Shredded." The wastes from the preparation, cooking and dispensing of foods that have been shredded to such a degree that all particles will be carried freely under the flow conditions normally prevailing in public sewers, with no particle greater than one-half (1/2) inch (1.27 centimeters) in any dimension.

"Gas Station." A business establishment selling fuel and related products for motor vehicles.

"Hotel." A building or group of buildings having ten (10) or more guest rooms in which lodging, or meals and lodging, are offered for compensation, including motels, tourist courts, motor lodges and cabins.

"Industrial Wastes." The liquid waste from industrial manufacturing processes, trade, or business as distinct from domestic or sanitary sewage.

"Infiltration." Water entering the wastewater facilities, including service connections, from the ground through such means as, but not limited to, defective pipes, pipe joints, connections or manhole seams and walls.

"Inflow." Water discharged directly into the wastewater facilities including service connections, from such sources as, but not limited to, roof leaders, foundation drains, cooling water discharges, sump pumps, drains from springs or swampy areas, manhole covers, cross connections from storm sewers, catch basins, storm waters, surface runoff, street wash waters or drainage.

"Inn." A business establishment having nine (9) or fewer guest rooms in which lodging is offered to guests for compensation and meals may be offered for compensation only to lodgers and to the general public.

"Land Drain." A separate piping system installed around buildings and in development infrastructure that is designed to capture and channel excess surface water, runoff, irrigation, downspout flow and keep it separated from and out of the sewer system.

"Lateral." The segment of sewer or land drain pipe that connects the residence or commercial building to the main sewer line or land drain line.

"Lot." An area of land in one ownership, or one leaseholder with ascertainable boundaries established by deed or other instrument of record, or a segment of land ownership defined by lot boundary lines on a subdivision plan approved by the County Council and recorded in the Morgan County Recorder Office.

"Lot Frontage." The horizontal distance measured in a straight line connecting the intersection of the front lot line with the side lot lines.

"Lot Lines:" The property lines bounding a lot as defined below:

- A. Front Lot Line: On an interior lot the line separating the lot from the street or private road. On a corner or through lot, the line separating the lot from each street or right-of-way.
- B. Rear Lot Line: The lot line opposite the front lot line. On a lot point at the rear, the rear lot line shall be an imaginary line between the side lot lines parallel to the front lot line, not less than ten (10) feet long, lying farthest from the front lot line. On a corner lot, the rear lot line shall be opposite the front lot line of least dimension.
- C. Side Lot Line: Any lot line other than the front lot line or rear lot line.

"MGSID Agent." The administrator, operator, or inspector authorized to represent the Chair or MGSID Board of Trustees.

"Manager or Administrator." The manager or administrator of the Sewer System of the District or authorized deputy, agent or representative of the Board of Trustees.

"May." A permissive verb (see 'shall').

"Motel." See Hotel.

"Natural Outlet." Any outlet into a watercourse, pond, ditch, lake, or other body of surface or groundwater.

"Owner." The person or persons, natural or corporate, in whom for the time being title is vested in real property situated in the District, including persons having charge of or occupying any premises used for human occupancy, employment, recreation or other like purposes.

"Person." Any individual, firm, company, association, society, corporation or group.

"pH." The logarithm of the reciprocal of the weight of hydrogen ions in grams per liter of solution. Neutral water, for example, has a pH value of 7.0 and thus a hydrogen ion concentration of 1E-7 (one part in ten-million).

"Pollutant" shall include but is not limited to dredged spoil, solid waste, junk, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or by-products, heat, wrecked or discarded equipment, rock, sand, dirt, and industrial, municipal, domestic, commercial, or agricultural waste of any kind.

"Public Sewer." A common sewer in which all owners of abutting properties have equal rights and which is controlled by public authority. The term "public sewer" shall include the MGSID Wastewater Treatment Plant and Public Sewer System.

"Pre-Treatment System." A system installed at the source location, usually a commercial, manufacturing or restaurant business, in order to pre-treat the wastewater and remove all special, nonresidential, waste and chemicals before the discharge enters the main sewer system and treatment plant. Required for any entity connecting to and discharging into the Public Sewer System where the waste being discharged will have a detrimental effect on normal treatment plant operations, including fouling of machinery and alteration of the normal chemical and bacterial activity required to process wastewater.

"Restaurant." An establishment where food and drink are prepared and served to the public and where no food or beverages are served directly to the occupants of motor vehicles.

"Roomer." A person residing in and paying rent for a room in a single-family dwelling whether or not the person eats meals on the premises.

"Sanitary Sewer." A sewer that carries sewage and to which storm, surface, and ground waters are not intentionally admitted.

"Sewage." A combination of the water-carried wastes from residences, business buildings, institutions, and industrial establishments.

"Sewage Works." Facilities for collecting, pumping, treating, and disposing of sewage.

"Sewer." A pipe or conduit for carrying sewage.

"Sewer Extension." Any addition to the public sewers of the MGSID whether located in a public way or on private property and whether constructed at public or private expense.

"Shall" is mandatory; "may" is permissive.

"Slug." Any discharge of water, sewage, or industrial waste which, in concentration of any given constituent or in quantity of flow, exceeds for any period of duration longer than 15 minutes or more than two times the average 24-hour concentration of flows during normal operation.

"Storm Drain" or "Storm Sewer." A sewer that carries storm and surface waters and drainage, but excludes sewage and industrial wastes other than unpolluted cooling water.

"Sump." A structure located below the lowest level of a building intended to collect and remove groundwater before it can infiltrate the building. The sump shall be at least 16 inches in its smallest dimension and shall be plumbed with a minimum one-inch diameter pipe that carries sump water to be discharged outside the home.

"Sump Pump." A pump designed to drain water from a sump. The output from a sump pump SHALL NOT be connected to the sanitary sewer but shall be piped outside of and away from the building.

"Suspended Solids." Solids that either float on the surface of, or are in suspension in water, sewage, or other liquids, which are removable by laboratory filtering as prescribed in "Standard Methods for the Examination of Waste and Wastewater" published by the American Public Health Association and referred to as 'non-filterable residue'.

"Town." The Town of Mountain Green, County of Morgan, State of Utah.

"Trustees." The duly elected or appointed Board of Trustees of the Mountain Green Sewer Improvement District.

"Watercourse." A channel in which a flow of water occurs, either continuously or intermittently.

"Water Pollution Control Facility." The arrangement of devices and structures used for treating sewage and sludge.

End of Article I

SANITARY SEWER ORDINANCE

ARTICLE II – GENERAL

PART ONE – BOARD OF TRUSTEES

1.01 The Board of Trustees (the 'Board') is authorized by Utah State Code Titles 17A and 17B to govern activities related to sewer operations within the Mountain Green Sewer Improvement District. The Board consists of seven members periodically elected by voters within the District or appointed by the County Council. The Board meets at least monthly at the District Office at 5455 West Old Highway Road at 7:00 pm or as posted in the local newspaper.

1.02 The Board shall, from time to time, enact by resolution regulations prescribing the payment of sewer Impact Fees, connection, inspection and permit fees and sewer service charges for the use of the Sewer System. The Board shall also establish rules and procedures for levying, billing, guaranteeing and collecting all fees and service charges.

1.03 The Board shall establish rules governing the manner of and materials to be used in making connections to the Sewer System, and such other rules and regulations for the management and control of sewage disposal as they shall deem fit. All such resolutions enacting regulations as provided herein shall be deemed a part of these Rules and Regulations and incorporated herein by reference.

1.04 The Board is authorized to make and enter into such contracts as may be necessary, convenient or proper with respect to the carriage and treatment of sewage for improved property outside the territorial limits of the District, and to establish fees and charges for such service, including without limitation, impact and connection fees, sewer service charges and surcharges justly related to, but not less than, the charges fixed within this document, provided, however, that no such contract shall impair the ability of the District to properly provide sanitary sewer services within the boundaries of the District.

1.05 The Board has authority to charge and collect impact and connection fees, inspection and permit fees, and sewer service charges and to take such steps and adopt such resolutions as may be necessary to assure the collection and enforcement of the same from all persons who, pursuant to and in accordance with the requirements

of Morgan County's mandatory sewer connection ordinance, are required to connect to the Sewer System, whether the premises of said persons are connected to the Sewer System or not.

1.06 The Board may assign a penalty to any customer who shall become delinquent in the payment of any charges due the District. As provided by law, any unpaid and delinquent charges for sewer service shall be certified by the clerk or secretary of the District to the Treasurer or Assessor of Morgan County. The amount of delinquent charges, together with interest and penalties, shall immediately upon the certification become a lien on the delinquent premises on a parity with and collectible at the same time and in the same manner as general county taxes are a lien on the premises and are collectible. All methods of enforcement available for the collection of general county taxes, including sale of the delinquent premises, shall be available and shall be used in the collection of the delinquent sewer charges.

1.07 The Board is authorized to reduce, adjust, amend, abate or waive any fee that the Board is authorized to collect upon a finding of "unusual circumstances" including a finding of specific facts related to such unusual circumstances. The Board may also provide an offset or credit for a public facility for which an Impact Fee has been or will be collected if there is evidence provided by the developer that would justify the offset or credit so that the fees charged are fair. The Board is authorized to adjust the amount of an Impact Fee if the developer, including a church, school, or charter school, dedicates land for a system improvement, builds or dedicates all or part of a system improvement, or dedicates a public facility that the Board determines will reduce the need for a system improvement. The Board is authorized to adjust Impact Fees for low income housing, state or government facilities, school districts or a charter school, or other development with a broad public purpose if the Board can establish one or more sources other than Impact Fees to pay for such development. The Board is authorized to provide an adjustment that complies with U.C.A. 11-36-202 as amended.

PART TWO – WILL-SERVE LETTERS

2.01 The approval process for new developments consists of three phases, Concept, Preliminary and Final. After obtaining Concept Approval by the County Council, the Developer shall provide to the District concept plans and other documentation for the development and shall apply for a Conditional Will-Serve Letter.

2.02 After reviewing the concept plans and other documentation pertaining to the proposed development, the District issues a Conditional Will-Serve Letter establishing the conditions under which the District agrees to provide sanitary sewer service to the development. The Will-Serve Letter expires in the event that the Developer does not obtain Preliminary Approval within one year of the issuance date of the Will-Serve Letter, or in the event that the Developer does not obtain Final Approval within two years of the issuance date of the Will-Serve Letter. The Developer includes this

Conditional Will-Serve Letter in the documentation required for Preliminary Approval by the County Council.

PART THREE – DISTRICT FEES

3.01 The Mountain Green Sewer Improvement District has established a sanitary sewer Impact Fee as the fair amount to charge a new equivalent residential unit (ERU) in order to pay for replacement of the capacity consumed, which is a proportionate cost for treatment facility expansion, and to recoup the proportionate cost for existing infrastructure. By agreement with Morgan County Planning and Zoning Department, building permits shall not be issued until the Department receives proof that the sanitary sewer Impact Fee has been paid.

3.03 The Board has set an inspection fee of \$100 for a new ERU to pay for District review of building plans and inspection of new sewer piping. The District must be satisfied that the piping meets all District requirements before the piping may be covered.

3.04 The Board has set a monthly service fee per ERU to pay the cost of operating and maintaining the wastewater treatment facility and associated collector and interceptor lines. This fee is currently \$36 and may be periodically increased as costs increase.

PART FOUR – CONTROL OF SEWERS AND CONNECTIONS

4.01 No person shall uncover, make any connection with or opening into or otherwise use, alter, open any manhole or disturb the Sewer System, or any appurtenance thereto without first obtaining permission from the District. No person shall maliciously, willfully or negligently break, damage, destroy, deface or tamper with any pipeline, manhole, pump station or other equipment or appurtenance that is a part of the Sewer System.

4.02 No person shall connect any roof downspout, foundation drain, areaway drain, garage floor drain, sump pump or any other sources of surface runoff or groundwater to a Building Sewer or Building Drain, which in turn is connected directly or indirectly to the Sewer System, unless such connection is first approved by the District; however, such a connection shall only be for the purpose of disposing polluted surface waters. See 4.12 for land drain lateral connections.

4.03 In order to reduce unauthorized discharge of infiltration waters into the Sewer System, new-construction basements or below-grade rooms shall be protected by a sump designed to drain water from underneath the lowest concrete floor and thus prevent water infiltration into the basement or below-grade rooms. The sump shall be at

least 16 inches in its smallest dimension and shall be plumbed with a minimum one-inch diameter pipe that carries sump water through the foundation to discharge outside the home by connecting to an existing land drain system or daylighting the outlet downhill from the building. The District has authority to set aside this requirement where the home or structure is clearly not subject to water infiltration.

4.04 In order to reduce damage from backflow of wastewater into the home, the design of new homes below 5000 feet elevation shall include provisions for the installation and maintenance of a backflow preventer. If the homeowner elects to not install a backflow preventer, then that homeowner shall sign a form releasing the District of all liability in case of a backflow of wastewater into the home.

4.05 All plans and specifications for the construction of Building Sewers and all other additions to the Sewer System, including specifications for size, slope, alignment, building materials, and the methods to be used in connection with excavating, placement of pipe, jointing, testing, backfilling and compaction, shall in all respects conform with requirements of the Utah Plumbing Code and shall conform to the requirements of R-317.

4.06 All work on a Building Sewer shall be performed in accordance with the plans and specifications approved by the District and in accordance with the provisions of these Rules and Regulations. The entire length of the Building Sewer, including the connection to the Sewer System main line, shall be left fully exposed for inspection by the District. No backfilling shall be done until the inspection and testing is made and the work is accepted in writing by the District. In the event that the District finds that the construction work is incomplete, and if any required changes necessitate subsequent inspections and further testing, payment shall be made by the Owner to the District for each additional inspection and test as specified in this ordinance. The Owner of the premises, or his duly authorized contractor or agent, shall notify the District at least 24 hours prior to the time when the Building Sewer is to be ready for inspection and testing.

4.07 All costs and expenses incidental to the construction, connection and maintenance of the Building Sewer and lateral line shall be borne by the Owner. The Owner shall indemnify the District from any injury, loss or damage to persons or property, real or personal, that may directly or indirectly be occasioned by the construction and connection of the Building Sewer. All connections shall either be made personally by the homeowner or by a contractor licensed by the State of Utah to do that type of work.

4.08 A separate and independent Building Sewer shall be provided for every building, except that in those instances where one building stands at the rear of another on an interior lot, and no private sewer is available or can be constructed to the rear building through an adjoining alley, court, yard or driveway, the Building Sewer from the front building may be extended to the rear building and the whole considered as one Building

Sewer, but the District does not and will not assume any obligation or responsibility for damage caused by or resulting from any such single connection for both buildings.

4.09 No connection shall be made with the Sewer System where plumbing fixtures in the Premises to be served are located at an elevation lower than the elevation of that part of the Sewer System to which the connection is to be made, without prior written agreement with the Board of Trustees.

4.10 The Contractor shall:

- A. Be solely responsible for the means, methods, techniques, sequences and procedures of construction;
- B. Be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the construction work;
- C. Take all necessary precautions for the safety of, and provide protection necessary to prevent damage, injury or loss to, all employees on the work and other persons who may be affected thereby, as well as to property located at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities;
- D. Restore any streets, curb / gutter, sidewalks, grassed areas, parkways, utilities, public or private property disturbed or damaged in the course of the work, in a manner satisfactory to the District and to the Owner thereof;
- E. Comply with all applicable laws, ordinances, rules and regulations and orders of any public body having jurisdiction;
- F. Notify owners of adjacent utilities when construction work may affect them;
- G. Indemnify and hold the District harmless from and against any and all damage, injury or loss to any person or property, real or personal, caused directly or indirectly, in whole or in part, by the Contractor, any subcontractor, or anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable.

4.11 The Contractor shall not allow his name to be used by any person, directly or indirectly, either for the purpose of obtaining a permit or to do any work under his license. Any licensed plumber or contractor who violates this provision shall be disqualified from thereafter performing the work and a new contractor shall be retained by the Owner to do the work in accordance with the requirements of these Rules and Regulations.

4.12 Any lot in a development where a land drain system has been installed and stubbed to the lot, will be required to install a lateral from the stub to the outside of the building foundation, with a cleanout above grade, at the same time that the sewer lateral is installed and inspected. The land drain lateral shall be 4" white pipe for connection to the foundation perimeter drain, runoff drains, garage floor drains, sump pumps and downspout drains to ensure that no surface and/or runoff water from the building is introduced into the sewer system.

PART FIVE – USE OF THE SEWER SYSTEM

5.01 No person shall discharge or cause to be discharged into the sanitary sewer any unpolluted waters such as storm-water, surface water, groundwater, roof runoff, subsurface drainage or cooling water, except that polluted water from limited areas may be discharged into the sewer under limited conditions as specified by the District.

5.02 Storm water, other than that exempted under paragraph 5.01 and all other unpolluted drainage waters, shall be discharged to such sewers as are specifically designated as storm sewers, or to a natural outlet approved by the District and other regulatory agencies having jurisdiction over such matters.

5.03 No person shall discharge or cause to be discharged into the sanitary sewer any of the following described water or wastes:

- A. Gasoline, benzene, naphtha, fuel oil, paint thinner, oil-based paints or other flammable or explosive liquids, solids or gases;
- B. Waters containing toxic or poisonous solids, liquids or gases which either singly or by interaction with other wastes, may contaminate, injure or interfere with any sewage treatment process;
- C. Waters or materials that constitute a hazard to humans or animals, create a public nuisance, create any hazard or have an adverse effect on any waters receiving any discharge from the sewer system;
- D. Waters containing more than one gallon of milk per thousand gallons or containing any natural or artificial substance that in larger quantities may interfere with the normal wastewater treatment process;
- E. Waters or wastes having a pH lower than 5.5 or greater than 8.5 or having any other corrosive property capable of causing damage or hazard to structures, equipment and personnel of the Sewer System or wastewater works;
- F. Solid or viscous substances, in quantities or of such size capable of causing obstruction to flow in the Sewer System or other interference with proper operation of the Sewer System, such as but not limited to ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, un-ground garbage, whole blood, paunch manure, hair and fleshings, entrails, animal wastes, paper dishes, cups, milk containers, etc., either whole or ground by garbage grinders.

5.04 The following described substances, materials, waters or waste shall be limited in their discharge into the Sewer System to only those concentrations or quantities that will not harm the Sewer System or the wastewater works and will not have an adverse effect on the receiving stream, or otherwise endanger life, limb, public property or constitute a nuisance. The Board may set limits lower than the limits established below if in their opinion more severe limits are necessary to meet the above objectives.

- A. Wastewater having a temperature greater than 140 degrees Fahrenheit (60 degrees Celsius);
- B. Wastewater containing more than 25 milligrams per liter of petroleum oil, non-biodegradable cutting oils, or products of mineral oil origin;
- C. Wastewater from commercial sources containing floatable oils, fats or grease;
- D. Garbage that has not been properly shredded;
- E. Waters or wastes containing compounds of iron, chromium, copper, zinc and similar objectionable or toxic substances to such degree that the effluent exceeds the limits established by state regulations;
- F. Waters or wastes containing odor-producing substances exceeding limits established by the District;
- G. Radioactive wastes or isotopes prohibited by state and federal regulations;
- H. Qualities of flow, concentrations or both that constitute a 'slug' as defined in Article I;
- I. Waters or wastes containing substances that are not amenable to treatment or reduction by the wastewater treatment processes employed, or that result in the effluent exceeding limits established by state regulations;
- J. Waters or wastes that, by interaction with other waters or wastes in the Sewer System, release obnoxious gases, form suspended solids that interfere with the Sewer System or create a condition deleterious to structures and treatment processes.

5.05 In the event that any waters or wastes are discharged or are proposed to be discharged into the Sewer System, that in the judgment of the District may have a deleterious effect upon the Sewer System, treatment processes, equipment or receiving waters, or that otherwise create a hazard to life or constitute a public nuisance, the District may:

- A. Reject the wastes;
- B. Require a Pre-treatment system to be installed and maintained at the building location at the expense of the entity that will bring the wastewater from this location to an acceptable condition prior to discharge into the Sewer System;
- C. Require control over the quantities and rates of discharge;
- D. Require additional payment from the discharger to cover the added cost of handling and treating the wastes not covered by existing sewer charges under the provisions of these Rules and Regulations.

5.06 When considering the foregoing alternatives, the District shall give consideration to the economic impact of each alternative on the discharger. If the District permits the pre-treatment or equalization of waste flows, the design and installation of the plant and equipment to be used therefore shall be subject to the review and approval of the District.

5.07 Grease, oil and sand interceptors or traps shall be provided when, in the opinion of the District, they are necessary for the proper handling of gritty or liquid wastes containing floatable grease or oil in amounts exceeding those specified in paragraph

5.04 above. All interceptors shall be of a type and capacity approved by the District and shall be located so as to be readily and easily accessible for cleaning and inspection. The Owner shall be responsible for removal and disposal of the captive material and shall maintain records of the dates and means of disposal, all of which shall be subject to review by the District.

5.08 Where pretreatment or flow-equalizing facilities are provided or required for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation at the Owner's expense.

5.09 When required by the District, the Owner of any premises serviced by a Building Sewer carrying industrial wastes shall install a structure together with such meters and other appurtenances in the Building Sewer as may be necessary to facilitate observation, sampling and measurement of the wastes. Such structures, when required, shall be built in accordance with plans and specifications approved by the District. The aforesaid structure, meters and other facilities shall be installed at the Owner's expense and shall be maintained by the Owner so as to be safe and accessible at all times.

5.10 The District may require a user of sewer services to provide and deliver to the District information needed to determine compliance with these Rules and Regulations. This information may include:

- A. A record of wastewater peak discharge rates and volumes over a specified time period;
- B. Chemical analysis of wastewater;
- C. Information on raw materials, processes and products affecting wastewater volume and quantity.
- D. Quantity and disposition of specific liquids, sludges, oils, solvents or other materials important to sewer use control;
- E. A plat showing the location of any sewer or pretreatment facilities on the user's property;
- F. Details regarding wastewater pretreatment facilities;
- G. Details regarding systems to prevent and control the losses of materials through spills into the Sewer System.

5.11 All measurements, tests and analysis of the characteristics of waters and wastes to which reference is made in these Rules and Regulations shall be determined in accordance with the latest edition of Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association. Sampling methods, locations, times, durations and frequencies are determined on an individual basis subject to approval by the District.

5.12 No statement contained in this Article shall be construed as preventing any special agreement or arrangement between the District and any industrial concern

whereby an industrial waste of unusual strength or character may be accepted by the District into the Sewer System.

PART SIX – POWER AND AUTHORITY OF DISTRICT AGENTS

6.01 Any person receiving sewer service from the District shall permit a duly authorized Agent of the District, bearing proper credentials and identification, to enter such user's property at all reasonable times, for the purpose of conducting any necessary inspection, observation, measurement, sampling and testing relative to the discharge of Sewage into the Sewer System.

6.02 Duly authorized Agents of the District are empowered to obtain, from industries receiving Sewer Service from the District, information concerning processes that have a direct bearing on the kind and source of discharge into the Sewer System. Any firm may withhold information considered confidential. However, the firm must establish that revelation to the public of the information in question might result in an unfair advantage to its competitors.

6.03 While performing necessary work on private properties referred to in paragraphs 6.01 and 6.02 above, Agents of the District shall observe all safety rules applicable to the premises of the firm being visited.

6.04 Agents of the District shall be permitted, at all reasonable times, to enter private properties through which the District holds a duly negotiated easement for the purpose of, but not limited to, inspection, observation, measurement, sampling, maintenance and repair of any portion of the Sewer System within said easement. Such entry and subsequent work, if any, by the District within said easement shall be done in full compliance with the terms of the duly negotiated easement pertaining to the private property involved.

PART SEVEN – PENALTIES

7.01 Any person or entity found to be in violation of any provision in these Rules and Regulations shall be served with a first written notice stating the nature of the violation and providing a reasonable time limit for the satisfactory correction thereof. The offender shall, within the period of time stated in such notice, permanently cease all violations described in said notice.

7.02 If any person or entity shall continue any violation beyond the time limit provided in the first written notice, the offender shall be served with a final written notice, wherein the offender shall be assessed a fine set by the Board of Trustees and shall be given opportunity to appear before the Board at the time and place described in the final notice, to show cause why the penalty assessed by the Board should not be paid. In

the event the offender fails to appear before the Board, the Board shall request the fine to be appended to the County tax notice for that property.

7.03 Any person or entity violating any of the provisions of these Rules and Regulations shall become additionally liable to the District for any expense, loss or damage occasioned by reason of such violation, including court costs and attorney's fees.

End of Article II

SANITARY SEWER ORDINANCE

ARTICLE III – SITE PREPARATION

PART ONE – GENERAL

1.01 WORK INCLUDED

- A. Preparation
- B. Clearing and grubbing
- C. Topsoil removal
- D. Asphalt pavement removal
- E. Concrete removal
- F. Removal of fences and miscellaneous obstructions
- G. Disposal of waste materials

1.02 QUALITY ASSURANCE

- A. All tree trimming and removal shall be done in accordance with recognized tree surgery standards.

PART 2 – PRODUCTS

- A. Not used.

PART 3 – EXECUTION

3.01 SITE PREPARATION

- A. No clearing, demolition or removal of any kind shall proceed until all existing trees, improvements, etc. to be removed have been established and are inspected and documented by the District.
- B. Establish necessary clearing limits within the construction zone. Mark all trees, shrubs, structures, fences, concrete and other improvements to be removed.

- C. Within ten feet of clearing limits, inspect, photograph or video tape and record condition of concrete slabs, structures, landscaping and other features to remain which might be affected by work.
- D. All trees, shrubs and lawn areas to receive planting, rock outcroppings, fences, sprinklers and other improvements that are not to be removed shall be protected from damage or injury. If damaged or removed, they shall be restored or replaced in as nearly the original condition and location as is reasonably possible. Trees, shrubs and improvements not to be removed shall be marked in field by the District and / or shown on drawings.
- E. Give reasonable notice to the District to permit the salvage of plants, trees, fences, sprinklers and other improvements within the construction zone that may be destroyed because of the work.
- F. Notify interested utility companies to be present if disturbing ground in the vicinity of utilities.
- G. Protect active utility systems adjacent to or uncovered by any excavation during site preparation.
- H. Maintain benchmarks, monuments and other reference points and construction stakes.
- I. Prevent tree removal and / or pruning work of all improvements intended to remain within construction zone as well as all improvements outside the zone.

3.02 CLEARING AND GRUBBING

- A. Remove all surface vegetation to a depth necessary for complete removal of all roots and other deleterious materials from within the areas to receive structural fill or base course.
- B. All trees, stumps, roots, etc. to be removed within the construction zone shall be cut off, excavated or removed to a depth of not less than three feet below the existing ground surface.
- C. Branches of trees extending over the construction zone shall be trimmed to the boles to give a clear height of 20 feet above the existing ground surface. All trimming shall be done in accordance with recognized tree surgery standards. Remove additional tree branches under the direction of the District in such a manner that the tree will present a balanced appearance.

3.03 TOPSOIL REMOVAL

- A. Before any construction activity begins, remove topsoil to a maximum depth of one foot unless otherwise required by individual property owner, and stockpile on the same property from which topsoil was removed and stockpile where required by individual property owner.
- B. Topsoil shall be protected from contamination by weeds, debris, etc. and shall be replaced, graded and lightly compacted by Contractor at completion of project.
- C. Disposal of topsoil is not allowed.

3.04 ASPHALT PAVEMENT REMOVAL

- A. Asphalt shall be sawed to ensure the breakage of pavement along straight lines. A 'tee-cut' shall be employed such that the asphalt is cut at least one foot wider than the trench to allow new asphalt to be placed on an undisturbed surface, which provides a smoother transition over the disturbed trench soil.

3.05 CONCRETE REMOVAL

- A. Concrete shall be removed to neatly sawed edges with saw cuts made to a minimum depth of four inches.
- B. Concrete sidewalk or driveway to be removed shall be neatly sawed in straight lines either parallel to the curb or at right angles to the alignment of the sidewalk. No section to be replaced shall be smaller than 30 inches in either length or width.
- C. Unless otherwise shown on the drawings, if the saw cut would fall within 30 inches of a construction joint, expansion joint or edge, the concrete shall be removed to the joint or edge, except that where the saw cut would fall within 12 inches of a score mark, the saw cut shall be made in and along the score mark.
- D. Curb and gutter to be removed shall be sawed to a depth of 1-1/2 inches on a neat line at right angles to the curb face.

3.06 FENCES AND MISCELLANEOUS OBSTRUCTIONS

- A. No demolition or removal of fences or miscellaneous obstructions shall proceed until clearance is obtained from the property owner.

3.07 DISPOSAL OF WASTE MATERIALS

- A. Where salvage is not required or otherwise specified herein or as shown on the drawings, dispose of all removed materials at a suitable off-site location in accordance with applicable laws and ordinances.
- B. No burning shall be allowed.

END OF ARTICLE III

SANITARY SEWER ORDINANCE

ARTICLE IV

EXCAVATING, BACKFILLING AND COMPACTION

PART ONE – GENERAL

1.01 WORK INCLUDED

- A. Preparation

- B. Excavation
- C. Backfilling
- D. Compaction
- E. Dewatering
- F. Field Quality Control
- G. Cleaning up

1.02 RELATED WORK

- A. Article V – System Installation
- B. Article VI – Restoration of Existing Improvements

1.03 QUALITY ASSURANCE

- A. Comply with federal, state and local codes and regulations.
- B. All working conditions shall be in accordance with the Utah Occupational Safety and Health Division publication Safe Practices for Excavation & Trenching Operations, latest edition, and other Laws and Regulations which apply.
- C. The contractor is responsible for understanding and complying with the applicable requirements of Utah Code Rule R317-3 'Design Requirements of Wastewater Collection, Treatment and Disposal Systems.' In cases where the requirements of this ordinance conflict with or are less stringent than those of Rule R317-3, the requirements of Rule R317-3 shall prevail.

1.04 REFERENCES

- A. Utah Occupational Safety and Health Division (UOSHD).
- B. American Society of Testing Methods (ASTM) Designation D1557.

1.05 SUBMITTALS

- A. Submit for approval the drawings and structural calculations for trench shoring to be utilized.

1.06 QUALITY ASSURANCE

- A. Local jurisdiction requirements shall govern for all work in road right-of-ways.
 - 1. All work shall conform to the applicable standards, regulations and requirements of the District or County for backfill and compaction above the pipe.
 - 2. Permits shall be secured from jurisdiction by the Contractor.

1.07 WARRANTY

- A. See Contract General Conditions for guarantee period.

1.08 SUBMITTALS

- A. If requested, submit descriptions of all materials to District.

PART TWO – PRODUCTS

2.01 FOUNDATION MATERIALS

A. Sewer rock:

1. Shall be hard, durable, broken stone or slag.
2. Shall be graded within the following limits:

<u>Sieve Size</u>	<u>Percent Passing By Weight</u>
2"	100
1"	85-100
½"	20-40
#4	10-20

2.02 BEDDING MATERIALS

A. Gravel Bedding Material:

1. Shall be free from alkali, salt, roots, sod, limbs and other vegetative matter, slag, cinders, ashes, petroleum products or other material that in the opinion of the District may be objectionable or deleterious.
2. Graded within the following limits

<u>Sieve Size</u>	<u>Percent Passing By Weight</u>
1-1/2"	100
1"	95-100
½"	25-60
#4	0-10

2.03 BACKFILL MATERIALS

A. Excavated Soil Backfill Material:

1. Shall be free from alkali, salt, roots, sod, limbs and other vegetative matter, slag, cinders, ashes, petroleum products or other material that in the opinion of the District may be objectionable or deleterious.
2. Shall be select material from excavation with no particle larger than three inches in diameter.
3. Use on-site materials only if specified compaction requirements can be met.

PART THREE – EXECUTION

3.01 PREPARATION

- A. It shall be the Contractor's sole responsibility to locate all (whether or not shown on the drawings) existing gas lines, electrical, telephone, water,

- sanitary sewer, storm drain and other underground utilities with their existing house service connections, and all other underground structures in order that no damage or loss of service will result from interference with existing lines.
- B. Contractor shall review all available drawings, notes and information on the location of these underground lines and structures in determining the location of existing facilities.
 - C. Contractor shall have a pipe finder on the job at all times and mark all lines on the road ahead of the excavating machine.
 - D. Blue Stakes Location Center (801-532-5000) shall be contacted 48 hours (two working days) before any excavation is commenced.
 - E. Mark with paint any existing cracks on concrete along which work will take place, in order to determine after the construction is completed whether such damage was caused by the operations of the Contractor or had occurred previously. Any concrete showing unmarked cracks or damage upon completion of construction will be evidence of damage by the Contractor and shall be repaired or replaced to the satisfaction of the owner of the damaged concrete, at the Contractor's expense.
 - F. All fences removed for excavation shall be returned to their original condition except that portions damaged by Contractor shall be replaced with new fencing at the Contractor's expense.
 - G. Contractor shall obtain all required permits.

3.02 EXCAVATION

- A. All gas, sanitary sewer, storm drain, water and other pipelines, flumes and ditches of metal, wood or concrete, underground electrical conduits and telephone cable, and all walks, curbs and other improvements encountered in excavating trenches shall be carefully supported, maintained and protected from injury or interruption of service until backfill is complete and settlement has taken place.
- B. If any existing facility is damaged or interrupted, and before performing any work affected thereby, Contractor shall immediately identify the owner of such existing facility and give written notice thereof to that owner and to the District. Contractor shall comply with other applicable requirements of the General Conditions of the Construction Contract and indemnify the District from any and all damages resulting from damaged facilities.
- C. Excavation for pipe lines, concrete valve boxes, manholes and appurtenant structures shall include the work of removing all earth, sand, gravel, quicksand, stone, loose rock, solid rock, clay, shale, concrete, hardpan, boulders and all other materials necessary to be moved in excavating. Trenches shall be stabilized by shoring, bracing and sheeting or well-pointing to prevent the sides of the trench from caving in while pipe laying is in progress, and all such stabilizing materials shall be removed from the trench after pipe has been laid, except when such removal will cause damage.
- D. Trench support system shall be suitable for the soil structure, depth of cut, water content of soil, weather conditions, superimposed loads and vibration.

Contractor may select one of the following methods of ensuring the safety of workers in the trench, as approved by the Utah State Industrial Commission or its safety inspectors:

1. Sloping sides of trench to the angle of repose at which the soil will remain safely at rest.
 2. Shoring trench sides by placing sheeting, timber shores, trench jacks, bracing, piles or other materials to resist pressures surrounding the excavation.
 3. Using a movable trench box built from steel plates and a heavy steel frame of sufficient strength to resist the pressures surrounding the excavation.
- E. All damage, injury or loss resulting from lack of adequate sheeting, bracing and shoring shall be solely the responsibility of the Contractor, and the Contractor shall effect all necessary repairs or reconstruction resulting from such damage.
- F. Trenches shall be of necessary width for proper laying of pipe. Care shall be taken not to over-excavate. The bottom of the trenches shall be accurately graded to provide uniform bearing and support for each section of pipe along the entire barrel of the pipe.
- G. Trenches shall be excavated to the depths shown on the Drawings, including any required allowances for the sewer rock foundation, when required, and for other pipe bedding requirements.
- H. Trench width, measured at the top of the pipe, shall be as narrow as possible but not wider than 15 inches on each side of the pipe.
- I. Excavation for manholes, concrete boxes, cleanouts and similar structures shall be sufficient to leave at least 12 inches in the clear between the outer surfaces and the embankment or timber that may be used to hold and protect the banks.
- J. Excess materials shall be hauled away from the construction site or otherwise disposed of by the Contractor at an appropriate site.

3.03 BACKFILLING AND TRENCH PLUGGING

- A. The trenches shall not be backfilled until the utilities systems, as installed, conform to requirements of the Drawings and Specifications. Where, in the opinion of the District, damage is likely to result from withdrawing sheeting, the sheeting shall be left in place.
- B. Trenches shall be backfilled to the proper surface with material as shown or specified. Trenches considered by the District to be improperly backfilled shall be reopened to the depth required for correction, then refilled and compacted as specified, or the condition shall be otherwise corrected as approved by the District.
- C. Pipe Bedding – unless otherwise specified:
1. Consists of preparing an acceptable pipe foundation, excavating the pipe groove in the prepared foundation and backfilling from the foundation to the top of the pipe. All piping shall be protected, by adequate bedding,

from lateral displacement and possible damage resulting from impact or unbalanced loading during backfilling operations.

2. The pipe foundation shall consist of six inches of Gravel Bedding material in the bottom of the trench. Where the trench sub-grade material does not afford a sufficiently solid foundation to support the pipe and superimposed load, and where groundwater must be drained, the trench shall be excavated below the bottom of the pipe to such depth as may be necessary and this additional excavation shall be filled with sewer rock.
 3. A pipe groove shall be excavated in the pipe foundation to receive the bottom quadrant of the pipe so that the installed pipe will be true to line and grade. Bell holes shall be dug after the trench bottom has been graded. Bell holes shall be excavated so that only the barrel of the pipe bears on the pipe foundation.
 4. In bedding the pipe from pipe foundation to the top of pipe, Contractor shall deposit and consolidate gravel bedding materials concurrently and uniformly on both sides of the pipe. All bedding materials shall be placed in the trench with hand tools or other approved method in such a manner that they will be scattered alongside the pipe and not dropped into the trench in large quantities.
 5. A workman shall vigorously chink the gravel on both sides of the pipe using a shovel in a manner such that the gravel is tamped to support the underside of the pipe.
- D. Each lift shall be evenly spread and moistened or dried by disk harrowing or other means so that the required density will be produced.
- E. Gravel Bedding Material shall be used to backfill around cleanouts.
- F. Care shall be exercised so that, when backfilling is complete and settlement has taken place, all existing pipes, flumes, ditches, conduits, cables, walks, curbs and other improvements will be on the same alignment and grade as they were before work commenced.
- G. Trench Plugs:
1. In order to retard water flowing through trench bedding and eroding sewer pipe support, trench plugs shall be located at a maximum of 200-foot intervals along the entire length of pipe, or as directed by the District.
 2. Trench plugs shall be a minimum of 12 inches thick by a minimum of the full width of the trench. The plug must extend above the height of the gravel fill (at least 12 inches above top of pipe) and to the bottom of the trench (at least six inches below pipe).
 3. Plugs may be clay compacted to 95% of maximum dry density or concrete of 1500 psi minimum strength with six-inch maximum slump.
 4. Plugs shall be watertight for the entire trench width.

3.04 COMPACTION

- A. Compaction shall be the responsibility of the Contractor. He shall select the methods to be used and carefully perform the work of backfilling and compaction so as to prevent damage to new or existing piping. The

- Contractor shall replace, with new piping, any new or existing piping damaged by the work, as directed by the District.
- B. Backfill compaction shall meet the following requirements, unless otherwise specified by local jurisdictions:
 - 1. Under pavements or other surface improvements, the minimum density shall be 96% of laboratory maximum density, as determined by ASTM Designation D-1557.
 - 2. In unimproved areas the minimum density shall be 85% of laboratory maximum density as determined by ASTM D-1557.
 - 3. In landscaped areas the minimum density shall be 90% of laboratory maximum density as determined by ASTM D-1557.
 - C. Methods of compaction include mechanical compaction (MC) only. Authorization by the District to use any method does not relieve the Contractor of his responsibility to meet the specified density requirements. Compaction shall be performed in strict accordance with the manufacturer's recommendations for each type of pipe.
 - D. Mechanical compaction shall be accomplished by the use of sheep's-foot rollers, pneumatic tire rollers, vibrating rollers or other mechanical tampers of a size and type necessary to achieve the required degree of compaction.
 - E. Water jetting shall not be allowed.

3.05 DEWATERING

- A. The Contractor shall do all pumping, shall build all drains and do all the work necessary to keep the trench and pipes free from water during progress of the work.
- B. In wet trenches, a channel shall be kept open alongside the pipe for conducting water to a sump hole, from which it shall be pumped out of the trench. No water shall be allowed to enter the pipe.

3.06 FIELD QUALITY CONTROL

- A. The Owner shall employ a testing laboratory to perform field and laboratory density tests as specified in the pipe zone and shall provide access to the work and all men and machinery necessary to aid the testing laboratory personnel in performing field density tests or taking samples for laboratory tests. In general, tests and samples shall be made as the work proceeds. The Contractor shall cooperate with the District to schedule and perform tests.
- B. The District will direct a testing laboratory to perform maximum density tests on materials to be compacted from samples submitted by the Contractor that are taken from locations selected by the District.
- C. The District will direct a testing laboratory to perform field density tests of compacted backfill materials. The approximate location and number of such tests shall be as shown on the drawings or as selected by the District. Field density tests shall be taken as follows or as otherwise selected by the District:
 - 1. In planted or unimproved areas:

- a. 18 inches above the top of the pipe
- b. Finished grade
- 2. In streets, roads, parking lots or other paved areas:
 - a. 18 inches above the top of the pipe
 - b. 24 to 36 inches below the gravel road base
 - c. Gravel road base sub-grade
 - d. Top of gravel road base
 - e. Top of bituminous surface course
- D. Copies of test results prepared by the testing laboratory will be transmitted to the Contractor at the same time they are transmitted to the District.
- E. Successful performance of field density tests by the testing laboratory shall not relieve the Contractor of his responsibility to meet the specified density requirements for the complete project.
- F. Additional tests shall be made on samples taken from locations selected by the District.

3.07 CLEANING UP

- A. The roadway including shoulders, slopes, ditches and borrow pits shall be smoothly trimmed and shaped by machinery or by other satisfactory methods, to the lines, grades and cross-sections as established by Drawing and Specifications, and shall be so maintained until accepted. Any surplus material not suitable for spreading along the road to widen the existing shoulder or raise the grade shall be hauled away or disposed of at a suitable site.

End of Article IV

SANITARY SEWER ORDINANCE

ARTICLE V

SYSTEM INSTALLATION

PART ONE – GENERAL

1.01 WORK INCLUDED:

- A. Furnishing and installing pipe, fittings, manholes and service laterals;
- B. Adjusting sewer manhole rings to proper finish grade;
- C. Preparation and video inspection of line.

1.02 RELATED WORK

- A. Article IV – Excavation, Backfilling and Compaction

B. Article VI – Restoration of Existing Improvements

1.03 QUALITY ASSURANCE

- A. Workmanship and methods employed in the handling, transporting, storage, bedding and laying of pipe, fittings, associated structures and accessories shall conform to the appropriate manufacturers' recommendations and / or ASTM recommendations.
- B. "The contractor is responsible for understanding and complying with the applicable requirements of Utah Code Rule R317-3 'Design Requirements for Wastewater Collection, Treatment and Disposal Systems.' In cases where the requirements of this ordinance conflict with or are less stringent than those of rule R317-3, the requirements of Rule R317-3 shall prevail.

1.04 SUBMITTALS:

- A. Submit manufacturer's specifications for all projects.
- B. As-constructed locations of all wyes, cleanouts and covered fittings shall be prepared by the contractor and submitted to the District.

1.05 DELIVERY AND HANDLING

- A. Loading, transporting and unloading of pipe, fittings and accessories shall be accomplished in a manner to avoid shock or damage.

PART TWO – PRODUCTS

2.0 PIPING

- A. Concrete pipe shall meet the requirements of ASTM C-14, Class III, with push-on gasket joints conforming to ASTM C-443. Cement for the pipe shall be Portland cement, Type V, conforming to ASTM C-150.
- B. Polyvinyl chloride (PVC) pipe shall meet requirements of ASTM D 3034 for SDR 35. The pipe shall have integral wall bell and spigot joints conforming to ASTM D 3212, with a solid cross-section rubber ring, factory assembled, securely locked in place to prevent displacement during assembly. The sewer pipe shall be colored green for in-ground identification as sewer pipe, and the land drain pipe shall be colored white for in ground identification as land drain pipe.
- C. Minimum pipe size for sewer laterals shall be four inches diameter. Minimum pipe size for sewer mains shall be eight inches diameter. Otherwise, minimum pipe size shall be determined using Manning's Formula with a coefficient of 0.012 and a peak flow per ERU of 0.7 gallon per minute.

- D. PVC pressure pipe shall conform to ASTM D2241 for working pressure of 100 psi. The pipe shall be either supplied with bell and spigot joints meeting ASTM F477 or solvent cement joints conforming to ASTM D2564.

2.02 MANHOLES

- A. Manholes shall be 48 or 60 inches in diameter conforming to ASTM C-478 with a concentric cone section of 48" x 30" x 36" and with integral, polymer-coated rust-resistant steps spaced no more than 18 inches apart. If the sewer main is 12 inches diameter or greater, or if more than three sewer main pipes connect to the manhole, the manhole shall be 60 inches in diameter or as specified by drawing.
- B. Manholes may be pre-cast, including the base section, standard sections and grade rings.
- C. Cement for manholes shall be Portland cement, Type V, or Type II-A complying with ASTM C-150.
- D. Manholes shall be watertight both in the floor and to the full height of the walls.
- E. Joints shall be made tight by the use of Kent-seal or equal and the internal periphery of all joints shall show evidence of 100 percent seal around the joint.

2.03 MANHOLE RING, COVER AND GRADE RINGS

- A. The manhole ring and cover shall be gray iron castings conforming to ASTM A-48, Class 30, with non-rocking, machined bearing surfaces between cover and frame.
 - 1. The cover shall have cast-in lettering of "SEWER" and shall be vented or non-vented such that every other manhole is vented and every subsequent manhole is non-vented so that there is an approximate 50%/50% mix of vented and non-vented covers on every main line.
 - 2. The cover shall be a nominal 30 inches in diameter and shall conform to ASTM C-478I.
 - 3. The ring and cover shall have a combined weight of not less than 350 pounds.
- B. Manhole grade rings shall be nominal 30-inch diameter conforming to ASTM C-478 for concrete sewer manholes.

2.04 CAST-IN-PLACE CONCRETE

- A. Cement shall be Type II-A or Type V complying with ASTM C-150.
- B. Coarse aggregates shall conform to ASTM C-33 using 3/4-inch coarse aggregate size and 3/8-inch minus fine aggregate size.
- C. Air entraining agent shall conform to ASTM C-175 and added at the mixer.

- D. Concrete mix shall be 6.5 sacks per cubic yard, 4000 psi 28-day compressive strength, 4-inch maximum slump and 5 to 6.5 percent air entrainment.
- E. The cast-in-place collar in paved areas shall be an annulus with a width of at least 12 inches and a thickness of at least 12 inches. The upper surface of the collar shall be 1/8 to 3/8 inch below the surface of the paving.

PART THREE - EXECUTION

3.01 PREPARATION

- A. When connections are to be made to any existing pipe or other improvement and the actual elevation or position cannot be determined without excavation, the Contractor shall excavate for and expose the existing improvement before laying any pipe.
- B. Preliminary qualifying test: If required by the District, the first section of pipe not less than 300 feet in length installed by each crew shall be tested in order to qualify the crew and / or material. Successful installation of this section shall be a prerequisite to further pipe installation by said crew.

3.02 PIPE INSTALLATION

- A. Trenching:
 - 1. Slope trench walls or use trench box to meet OSHA standards.
 - 2. Trench width at bottom shall be no greater than pipe OD plus 30 inches.
- B. Bedding:
 - 1. Bedding shall be prepared in accordance with Article IV – EXCAVATION, BACKFILLING AND COMPACTION and as shown on the plans.
 - 2. All pipes shall be laid on a firm bed, true to the line and grade, and the butt end and shoulder of each pipe shall be positioned against the other in such a manner that there is no unevenness of any kind along the bottom half of the pipeline.
 - 3. A minimum of six inches bedding shall be under the pipe with additional sewer rock under the bedding as needed to afford a solid foundation.
- C. During all phases of pipe installation, dewater trench to prevent floating of pipe.
- D. Lay pipe in the uphill direction with the bell end pointing upgrade.
- E. Perform all work in strict accordance with the manufacturer's recommendations for the type of pipe being installed.
- F. Clean pipe joints just prior to connecting in accordance with manufacturer's instructions.
- G. Install a tight-fitting pneumatic or mechanical plug in the pipe that connects to the in-service main line and keep this plug in place until all construction, cleaning, video and pressure testing operations have been completed. Install a tight-fitting plug in the end of any open pipe at the end of the workday to ensure that trench flooding will not carry debris into the open pipe."

- H. Where water lines are parallel to sewer lines, maintain a minimum separation of 10 feet horizontal and / or a minimum vertical separation of 18 inches below the water line.
- I. Where water lines cross sewer lines, maintain a minimum vertical separation of 18 inches with the sewer line below the water line. Where this separation is impossible, a 20-foot length of PVC or D.I. pipe shall be centered under the water line so as to have no sewer pipe joint closer than 10 feet to the crossing. Joints near the crossing shall be of the solvent weld type.
- J. Take care to avoid contact between the pipe and compaction equipment. Compaction of bedding and backfill material should generally be done in such a way that compaction equipment is not used directly above the pipe until sufficient backfill has been placed to assure that the compacting operation will not damage the pipe or produce indentations in the pipe. NOTE: ANY INDENTATION OR ELLIPTICAL OUT OF ROUND CONDITION IN THE PIPE THAT IS VISIBLE IN THE VIDEO IS SUFFICIENT CAUSE FOR THE PIPE TO BE RE-BEDDED AT THE CONTRACTOR'S EXPENSE.
- K. Pipe transition into the manhole must be smooth and free of any pockets or indentations.
- L. Pipes entering or exiting from manholes shall be sealed from the outside to prevent groundwater infiltration. In addition, the bottom half of the pipe shall be grouted on the inside of the manhole to reduce buildup and to facilitate wastewater flow.
- M. Joining of new sewer lines to existing lines or laterals shall be accomplished using Mission Rubber Company coupler type MR02 XX ARC, where 'XX' represents the size of the pipe, or an equivalent coupler approved by the District.
- N. Minimum slope for eight-inch residential sewer lines shall be 0.50 percent.

3.03 MANHOLES

- A. All manholes shall be located in a public right-of-way, unless the District agrees that there are compelling reasons for locating them elsewhere. If the District agrees to locations not in a public right-of-way, the Developer must agree to ensure permanent access to the manholes via a roadway at least 14 feet wide and a roadbed at least eight inches thick of road base compacted to at least 96% of laboratory maximum density, as determined by ASTM Designation D-1557.
- B. Excavation, bedding and backfill for manhole installation shall be in accordance with Article IV – EXCAVATING, BACKFILLING AND COMPACTION.
- C. Construct the manhole at the specific stations and grades shown on the drawings.
- D. A manhole is required on all sewer main stub ends where buildings will be connected.

- E. Set manholes so that the top of the manhole lid is level with the finished surface or grade except that lids in asphalt or concrete roadways shall be 1/8 to 3/8 inch below the asphalt or concrete roadway surface.
- F. Cast-in-place base and floor shall conform to requirements of standard details for layout and configuration.
- G. All lifting holes must be grouted watertight. Perforations shall be sealed with concrete from the outside with sufficient external reinforcement to resist being blown out or eroded by groundwater pressure.
- H. A bed of gravel or sewer rock at least 12 inches deep shall support the manhole base.
- I. The base shall be anchored into the base section using four, #4 re-bars placed with two at 90 degrees to the other two and spaced approximately two feet apart. Bars shall be at least one inch longer than the distance across the segment at the placement location and shall be inset at least one-half inch into each side of the base section at a height of eight inches from the bottom of the base.
- J. The bottom of the pipe shall be at least eight inches above the bottom of the base and the top of the base at the top of the pipe shall be flush to the top of the pipe. The top surface of the base shall have a minimum two percent slope upward from the pipe to the wall.
- K. Pipe boots are required at all connections to the manhole and a smooth transition is required between pre-cast manhole base and pipe.
- L. Open channels within the manhole base shall be sized to match outgoing pipe capacity. Side channels shall be curved to provide a smooth transition into the main flow across the manhole base.
- M. No pipe bell is permitted in the manhole.

3.04 LATERAL CONNECTIONS

- A. Install factory-made wyes for new sewer mains and saddle attachment, Romac style "CB", or approved equivalent, for nose-on to existing sewer main. The laterals must not protrude into the sewer main beyond what the attachment design calls for.
- B. Install the sewer lateral such that the angle between the centerline of the sewer lateral connects at an angle of at least 30 degrees (10 o'clock or 2 o'clock positions) above the centerline of the sewer main.
- C. The lateral piping shall be schedule 40 PVC and shall be green in color for sewer and white in color for land drain.
- D. The sewer lateral shall be separated from the water line at least three feet horizontally or at least 18" deeper than the water line.
- E. The lateral trench shall be open and the top of lateral shall be exposed to allow for slope measurement.
- F. The connections with the lateral stubs shall be open for visual inspection.
- G. Laterals shall have a minimum slope of 0.25 inch per foot.

- H. Laterals shall not run closer than two feet to a building after exiting and shall be at least four feet deep from final grade. If less than four feet deep, the District shall be advised of the necessity by letter.
- I. Laterals must be laid in a bed of inch minus gravel at least three inches deep and chinked such that the lateral does not deflect when stepped on. After inspection by the District, the lateral shall be covered by a layer of inch minus gravel at least three inches deep before covering and compacting with soil.
- J. Lateral joints shall be gasketed or clearly well bonded. If not, a leak test may be required by the inspector.
- K. The house end of the laterals shall be temporarily capped to prevent infiltration, preferably by a solid cap.
- L. No sewer lateral connections shall be made to a manhole on a sewer main.
- M. A cleanout shall be installed near the building, or just inside the building. Outside cleanouts shall have a brass cap and shall not be buried but may be lowered to final grade.
- N. A cleanout shall be installed at least every 100 feet and whenever a change in direction of the sewer lateral exceeds 135 degrees.
- O. Ninety-degree elbows in the laterals are prohibited. Use forty-five degree or less elbows spaced at least one foot apart.

3.05 CLEANING AND FLUSHING OF SANITARY SEWER LINES

- A. Install a tight-fitting pneumatic or mechanical plug in the pipe that connects to the in-service main line and keep this plug in place until all construction, cleaning, video and pressure testing operations have been completed.
- B. Temporarily install a tight-fitting, reinforced basket screen in the lowest pipe section of the nearest existing manhole to prevent debris from entering the existing sewer line. No flushing shall commence without this screen being in place.
- C. Immediately after placement, thoroughly clean pipe lengths of all debris.
- D. At the end of the day's work, or at any time the work is closed down for any reason, plug all open ends of the pipe to prevent entrance of small animals and foreign material of any kind into the pipe.
- E. After all piping in a section is laid, thoroughly clean, flush and vacuum all debris from the new sewer mains.

3.06 VIDEO INSPECTION AND PRESSURE TESTING

- A. After the sewer lines have been cleaned and flushed, the contractor shall arrange for video inspection at the contractor's expense.
- B. Just prior to video inspection of a section of line, water shall be run into the section to ensure that low spots in the section will be revealed.
- C. All new sections shall be video inspected at a distance resolution and accuracy of no worse than 1 foot.

- D. The video camera shall pause at all laterals and wide joints and be rotated to scan the laterals and joints for defects.
- E. Improper lateral installation, wide joints, water pooling greater than one-inch depth or any noticeable bulges in the pipe wall shall be cause for the section to be excavated, re-bedded and re-inspected by video at the contractor's expense.
- F. A copy of the video and documentation shall be provided to the District within one week of completion of continuous videoing and at least one week prior to placing asphalt over the new line.
- G. Manhole to manhole segments shall be pressure tested in accordance with the ASTM F 1417 standard to ensure the integrity of main line joints and lateral connections and a report of this testing will be provided to the District at the same time as the inspection video.

End of Article V

SANITARY SEWER ORDINANCE

**ARTICLE VI
RESTORATION OF EXISTING IMPROVEMENTS**

PART ONE – GENERAL

1.01 WORK INCLUDED

- A. Construction or repair of fences, driveways, walls, landscaping, roadways, curbs, sprinkler systems, walks or any other structure or improvement (surface or subsurface) removed or damaged pursuant to completing the contract requirements.

1.02 QUALITY ASSURANCE

- A. Use adequate number of skilled workmen who are trained and experienced in the type of construction required.
- B. The quality of the finished restored improvement, as determined by the District, shall be of equal or better quality than was said improvement prior to being damaged or removed.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. As required to complete the restoration of existing improvements.
- B. At least equal to original improvement at the time of damage or removal, as determined by the District and Owner, and matching in finish and dimension.
- C. Shall be in accordance with requirements for governing municipality.

PART 3 – EXECUTION

3.01 PREPARATION

- A. Protect all public and private property adjacent to the work. Exercise due caution to avoid damage to such property.

3.02 RESTORATION

- A. Repair or replace all existing surface and subsurface improvements that were damaged or removed as a result of operations of work under this contract. In roads and driveways, the restored surface and base courses shall be at least equal in thickness to the existing.
- B. Restoration shall be of at least equal quality and identical in dimension to original improvement unless specified otherwise by the District or local jurisdiction having authority.

End of Article VI

SANITARY SEWER ORDINANCE

ARTICLE VII

DISTRICT ACCEPTANCE OF DEVELOPMENT SEWERS

PART ONE – GENERAL

1.01 DEMONSTRATION PERIOD

- A. For a period of two years from the date of installation, the Developer shall be totally responsible for all maintenance of the sanitary sewer collectors and interceptors that they install to serve their developments.
- B. Within that two-year period, the Developer shall document all sewer system maintenance operations within the development (e.g., cleaning and videoing, line unplugging, line movement stabilization or replacement) and shall inform the District of these operations by FAX or by letter.

1.02 PRE-ACCEPTANCE REVIEW

- A. After the two-year demonstration period, the Developer shall schedule a review of the development sewer system and documentation with the District.
- B. Within 30 days prior to the scheduled review, the Developer shall clean and record a new video of the development sewer system that will be provided to the District as part of the review.

- C. In this review the District's technical staff shall review the new video provided by the Developer and identify all known or suspected items of concern such as potential blockage points or land movements, and shall identify key manholes and recommend a schedule to check for partial blockage, repairs and for additional cleaning and re-videoing.

1.03 ACCEPTANCE PROCEDURE

- A. If the District considers the Developer's documentation and maintenance operations to be adequate, the District shall confirm acceptance of the sewer system by letter to the Developer.
- B. If the District considers some items to be unreasonably expensive to maintain, the District may refuse to accept responsibility for those items until the Developer provides a satisfactory solution for those problem items.

**End of Article VII
END OF SANITARY SEWER ORDINANCE**

IV. Sanitary Sewer Overflow Action Plan

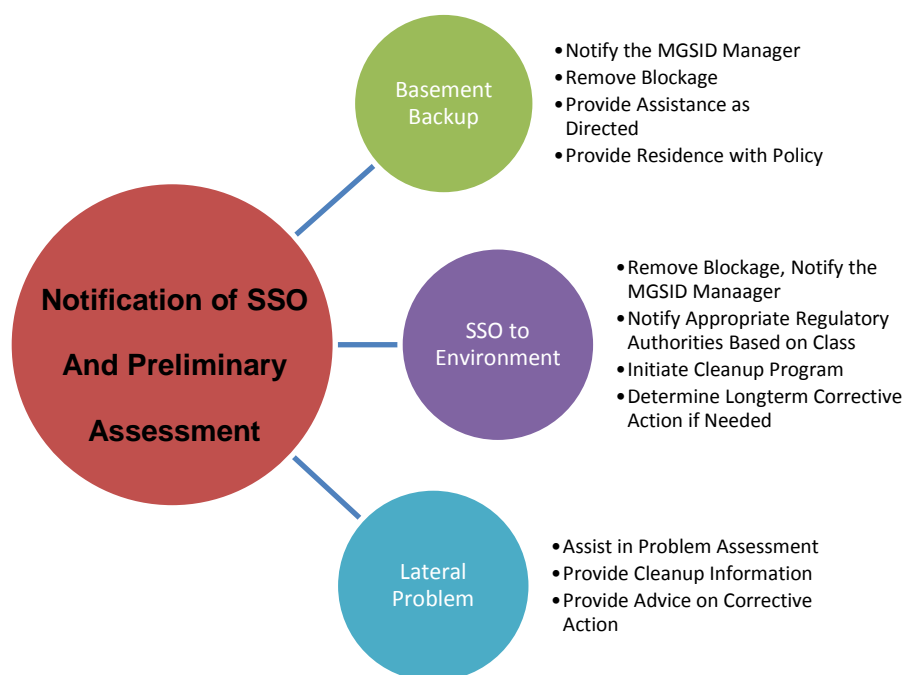
Whenever sanitary sewage leaves the confines of the piping system, immediate action is necessary to prevent environmental, public health or financial damage from occurring. In addition, quick action is normally needed to mitigate damage which may have already occurred. For the purpose of this section,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

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

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

Response Activities

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



General Notification Procedure

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

Agency Notification Requirements

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

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

Public Notification

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

Overflow Cleanup

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

Corrective Action

All SSO's should be followed up with an analysis as to cause and possible corrective actions. An SSO which is the result of grease or root plug may be placed on the preventive maintenance list for more frequent cleaning. Serious or repetitive plugging

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

V. Grease, Oil and Sand Management Program

Purpose:

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

Regulatory Authority:

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

Program Implementation:

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

The following steps detail the procedure that MGSID personnel shall follow in implementing this program.

Evaluation:

MGSID staff will evaluate an industrial user (IU) discharge to determine if grease, oil or sand management is required at the following events:

- 1) Issuance of a construction or remodeling building permit.
- 2) When the collection line in front of the business is CCTV inspected as part of the sanitary sewer system preventative maintenance program.
- 3) When a downstream sanitary sewer pipeline plugs due to oil, grease or sand.
 - i. No further action will be taken if it is determined that no potential exists for significant enrichment of the wastewater with grease, oil or sand. Enrichment is defined as a discharge with greater volume or concentration of grease, oil or sand than that discharged from a typical residential connection. For oil and grease, the typical residential discharge has less than 100 mg/L of oil and grease for any sample taken. Greater concentrations would be enrichment.

Also, a significant buildup of oil and grease in the lateral would indicate enrichment. Sand and dirt is not typically discharged from a residential connection. Any potential for sand or dirt discharge would be enrichment.

Implementation:

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

TRACK 1

This track is available for IU's which exist at the time of program implementation. However, not all existing IU's may be permitted to use it. Determination will be made on a case by case basis. IU's on this track will be permitted to either pay a contractor or MGSID to clean the main sewer line from their place of business to the nearest trunk line. A trunk line is any sewer line which has an inside diameter of eighteen inches or larger or has been classified as a trunk line by MGSID. Cleaning frequency will be determined by inspections performed by MGSID.

TRACK 2

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

Inspection Fee	\$100.00
Testing Fee	\$200.00

Should the testing reveal grease and oil in excess of 100 mg/L, a fine of \$100.00 for each pound of oil and grease (O&G) discharged for the past reporting period shall be assessed. The excess pounds of grease and oil shall be determined by using the following equation:

$$(\text{Total Reporting Period water use in MG [Million Gallons]})(\text{mg/L O\&G} - 100)(8.34)$$

The IU will also be ordered to return to compliance immediately. Retesting will be done within thirty days if the trap has not been cleaned and a cleaning report submitted. Another inspection and testing fee will be assessed. Should the test results still not comply with the 100 mg/L oil and grease limit, enforcement will be escalated in accordance with the MGSID's Enforcement Response Plan. In addition, an entity which is frequently violating the 100 mg/L limit may be issued a pretreatment permit in order to further regulate the IU

Should the testing reveal TSS in excess of 250 mg/L, a fine of \$100.00 for each pound of TSS discharged for the past reporting period shall be assessed. The pounds of TSS shall be determined by using the following equation:

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

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

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

List of Acceptable Entities That Recycle Oil and Grease

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

Recycler	Phone Number	Address
Renegade Oil	801-973-7912	1141 S. 3200 W, SLC, UT 84104
Red Giant Oils	801-627-7273	2785 Industrial Dr., Ogden, UT 84401
WRE Oil Recyclers	801-327-8694	3950 S 700 E, Ste 100, SLC, UT 84107

VI. System Evaluation and Capacity Assurance Plan (SECAP)

MGSID believes that one of the keys to preventing sanitary sewer overflows is to evaluate system capacity and to monitor flows throughout the system in order to ensure that capacities are not exceeded. Should a collection sub-system exceed the capacity of the pipes, the system will be immediately re-evaluated and corrective action taken.

The following elements are all part of MGSID SECAP program.

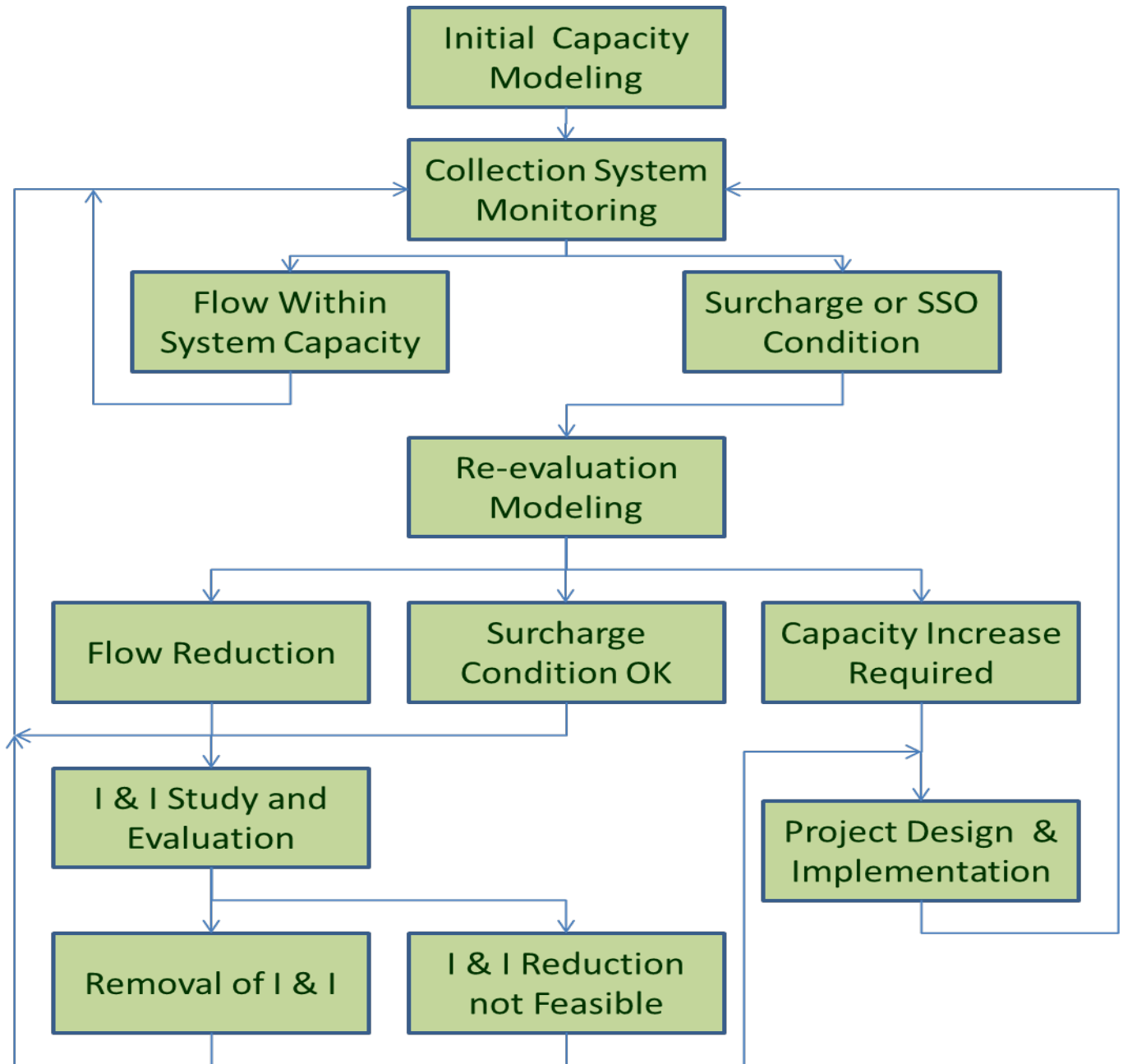
- 1) Initial Capacity Modeling and Master Planning
- 2) Flow Monitoring
- 3) Surge Flow Analysis
- 4) Re-evaluation Modeling and Analysis
- 5) Flow Reduction Evaluation and Implementation
- 6) Capacity Increase Evaluation and Implementation

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

Initial Capacity Evaluation

MGSID has performed an analysis and modeling of each critical subsystem contained within its collection system. Subsystems are segregated based on the branching of the collection system. Trunk lines and collector lines are evaluated until the system reaches a point where less than 400 Equivalent Residential Units (ERU) are upstream of that point in the system. The 400 ERU point was chosen based on the minimum slope requirements of the State of Utah. **An 8-inch pipe constructed on minimum slope will carry the flow from 400 ERU is based on 310 gallons per ERU per day and a peaking factor of 2.5.** The ERU equivalent is based on typical Utah information and assumes that the peaking factor will account for a reasonable amount of inflow and infiltration. If an area is known to have, or flow metering identifies, a significant amount of inflow and infiltration, additional evaluation will be needed. In these areas the capacity of an 8-inch pipe system may be significantly reduced below 400 ERU.

SECAP Flow Chart



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

Flow Monitoring

MGSID conducts all of the flow monitoring at the treatment facility on both the influent and effluent on a 24/7/365 basis. The influent flow rate is monitored at two locations: on the main line coming into the facility with an Ultrasonic flow meter through a Parshall flume and just after the headworks pumping system through a magnetic meter before it is introduced into the first lagoon. The effluent flow rate is monitored via a sonar system at the final station of the chlorine basin before entering the final transition to discharge in the Weber River.

Surcharge Flow Analysis

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

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

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

Flow Reduction Evaluation

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

Foreign Objects or Obstructions

There are multiple foreign objects which may be found in sewers. These may include objects knocked into sewers during construction, illegally placed in sewer manholes, roots, grease and soaps, bellies in piping systems, etc. Each of these problems should be found during the backup investigation and a plan developed

to insure the problem does not reoccur. Types of action may include increased cleaning frequency, spot repairs, greater pretreatment activity, lining of pipes, and other corrective actions which resolve the problem.

Allowable Surcharging

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

Revised System Modeling

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

Re-evaluation Modeling and Analysis

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

- 1) MGSID staff using commercially available software
- 2) MGSID staff using spreadsheet models
- 3) Engineering firms using available software or spreadsheets.

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

Capacity Increase Evaluation and Implementation

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

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

Finalized projects should be placed on the CIP.

System Improvement Prioritization

The priority for improvement should follow the following general guidelines:

High Priority Projects

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

Medium Priority Projects

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

Low Priority Projects

If the observed problem is infrequent, there is possibility that it may not repeat in the near future and the possibility that increased flow in the subsystem is low, the correct priority is low. Low priority projects will be placed in the budget process

and evaluated against other needs. These projects will eventually be completed, but the work is not prioritized above plant and equipment needs.

Capital Improvement Plan

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

VII. SSMP Monitoring and Measurement Plan

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

Records Maintenance

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

Operations Records

Operations records that should be maintained include the following:

- Cleaning records
- CCTV inspections records
- Manhole inspection records
- Hot spot maintenance list
- Spot repairs
- Major repairs
- System capacity information
- SSO or basement backup records including notification documents to appropriate agencies (call logs, etc.)
- Capital Improvement Plan

Records will be maintained by the Manager in a central location. Records may be maintained either on an electronic record or as a paper record. The extent of the record should be sufficient to demonstrate the activity recorded was completed appropriately.

Performance Measurement (Internal Audit)

Periodically, but not less than annually, MGSID should assess and audit the effectiveness of the elements of this SSMP. All elements should be reviewed for effectiveness as well as all records should be reviewed for completeness. An internal audit report should be prepared preferably annually but no less than once every five years which comments on the following:

- Success of the operations and maintenance program
- Success of other SSMP elements
- Adequacy of the SECAP evaluations
- Discussion of SSO's and the effectiveness of the response to the event including corrective action

- Review of Defect reports and adequacy of response to eliminate such defects
- Opportunities for improvement in the SSMP or in SSO response and remediation

The annual audit report need not be extensive or long. It should, however be sufficient to document compliance with the standards set in the SSMP. The audit reports should be maintained in accordance with the MGSID records retention schedule.

SSMP Updates

When a plan deficiency is identified through an audit, inspection or plan review, and the deficiency requires an SSMP update, the plan may be updated at the discretion of the Manager. SSMP updates should be recorded in a revision index maintained by the Manager.

SSO Evaluation and Analysis

At least annually in the internal audit and more frequently as needed, MGSID will evaluate SSO trends based on frequency, location and volume. Trend evaluation will be empirical unless a large number occur sufficient to make a statistical analysis viable. If a trend is identified, a corrective action may be appropriate.

Public Communication and Outreach

MGSID will reach out to the public about the development, implementation and performance of the SSMP. This communication may be accomplished by any of the following methods:

- Public hearings
- Public meetings
- Newsletters
- Direct mailing
- Leaflets
- Other effective methods

MGSID will accept comments, either written or verbal, and will review such comments for applicability. Public interest may be difficult to generate, but should be sought, nonetheless.

VIII. Sanitary Sewer System Mapping

MGSID maintains an AutoCAD map of sewer lines, manholes and cleanouts that is based on a combination of data attained from the original installation maps, physical inspections and measurements. The AutoCAD map is continually updated with new additions to the system and verified through the ongoing inspections processes. The Manager of MGSID uses this map to keep track of all inspections, cleanings, maintenance and repair.

In addition to the AutoCAD map, MGSID retains a catalog of all maps and plats that have been submitted to the District since the formation in 1990. These maps are organized and stored in our main office facility.

Starting in 2015, MGSID will invest in the necessary equipment, software and training required to update all mapping to a GIS based system that incorporates the latest satellite and Google maps that are available. The goal will be to incorporate this with the GIS mapping used with the Morgan County municipal systems.

DESCRIPTION	LOCATION
AutoCAD based system map	Manager's computer
Development/Subdivision Maps - Digital	Manager's computer
Development/Subdivision Maps – Paper	Plat storage – Main Garage
GIS / Google Earth	In development

IX. Basement Backup Program

Basement backups are a serious impact on a home or business owner. As such, all reasonable efforts should be taken to prevent such backups from occurring. Sewer system backups are the result of several system problems. Such problems include any one or a combination of the following:

- 1) Laterals serving real properties are owned by the property owner and lateral maintenance is their responsibility. Roots, low points, structural failure, and grease are primary problems lateral owners face.
- 2) Backups caused by main line plugs are usually caused by roots, grease, low points, foreign objects and contractor negligence.
- 3) Piping system structural damage may cause basement backups. Such structural problems include age or deterioration damage, installation damage, excavation damage and trenchless technology damage.
- 4) Excess flow problems may surcharge a piping system and cause backups into homes. Excess flows usually occur when major storm waters inflow into sanitary sewers. Sanitary sewers are not designed for such flow. In addition, some homeowners may illegally connect foundation drains and sump pumps to the sanitary sewer system.

Basement Backup Response

When MGSID is notified about a basement backup, staff will log the complaint in a complaint log. The person receiving the call may log the backup complaint or may ask administrative staff to document the complaint.

All backup complaints shall be investigated by staff. If the investigation determines that the cause of the backup is only in the lateral, staff may offer technical information but should not take responsibility for cleanup or subsequent restoration.

When it is determined that the basement backup is the result of a mainline problem, MGSID will follow the policy approved by its governing authority. A copy of this policy should be given to the home owner. It should be noted that all action MGSID takes are

on a no-fault basis. MGSID does not accept liability nor does it waive its governmental immunity.

Backup Prevention Design Standard

MGSID promotes system designs which minimize backups and insure proper operations. To this end MGSID has a design standard for all system construction. In addition, MGSID complies with state design standards contained in R317-3. Finally for laterals, the following policy applies:

Policy on the Installation of Backflow Valves

Reference Regulatory Documents:

The following regulations are referenced in the establishment of this policy:

- Utah Code Title 15A-2-103(c). This code section adopts the 2009 edition of the International Plumbing Code.
- The 2009 International Plumbing Code, section 715 Sewage Backflow.

MGSID Policy:

- See MGSID Sanitary Sewer Ordinance, Article II, Part Four, 4.04
 - In order to reduce damage from backflow of wastewater into the home, the design of new homes below 5000 feet elevation shall include provisions for the installation and maintenance of a backflow preventer. If the homeowner elects to not install a backflow preventer, then that homeowner shall sign a form releasing the District of all liability in case of a backflow of wastewater into the home.
- The State of Utah has adopted the International Plumbing Code(IPC) as its plumbing building standard;
- MGSID use the IPC as their statute for plumbing construction and installation;
- And the IPC requires the installation of a sewage backwater valve “where the overflow rims of the lowest plumbing fixtures are below the next upstream manhole in the public sewer.”

Therefore, for new construction, MGSID requires the installation of backwater valves as stipulated by the IPC already propagated for all new construction.

X. No-Fault Sewage Backup Claims Program

The purpose of this program is to assist in the cleanup of real and personal property, and/or compensate persons for the loss of real or personal property, destroyed or damaged as the result of a backup of MGSID facilities, regardless of fault, within the restrictions, limitations and other provisions of this policy.

Cleanup of Real and Personal Property:

- (A) The Manager may, in accordance with MGSID's standard procurement procedures, engage the services of one or more cleanup contractors to perform cleanup services at the direction of the Manager on an as-needed basis.
- (B) Upon discovering backup described in this Policy, a property owner should immediately notify the Manager of such event.
- (C) Upon notification of the occurrence of the event, the Manager may contact a cleanup contractor under contract with MGSID pursuant to subsection (A) above, and direct the cleanup contractor to perform all cleanup work at the premises, in accordance with established cleanup criteria.
- (D) In the event the property owner engages the services of a cleanup contractor prior to notifying the Manager of the event, MGSID may reimburse the property owner for actual expenses incurred by the property owner, but only up to the amount MGSID would have paid its own cleanup contractor under subsection (C) above.
- (E) In the event any real or personal property cannot, in the reasonable judgment of the Manager, be restored to its pre-event condition, in accordance with the cleanup criteria, MGSID may pay to the property owner the estimated fair market value (not the replacement value) at the time of the event, of such real or personal property, with the exception that carpet and major appliances will be replaced with new like-kind items.
- (F) In no event will MGSID pay, or reimburse the property owner for the payment of special or consequential damages.

Establishment of Cleanup Criteria:

The Manager may, from time to time, establish cleanup criteria which will govern MGSID's cleanup and payment responsibilities under this Policy. In establishing such cleanup criteria, the Manager may give due consideration to generally available health guidelines, recommendations from governmental and academic experts, and other sources of guidance reasonably deemed by the Manager to be balanced, unbiased, and protective of health and safety.

Application - Time Limitations:

Any request for reimbursement of cleanup expenses under this policy, or payment of fair market value, may be made by filing a written application in such form as prescribed by the Manager. Such application must be submitted to the MGSID Manager within thirty (30) days after the occurrence of the event.

Qualification for Assistance:

An application or request for assistance or payment under this Policy may qualify only if the Manager, after due inquiry or investigation, makes an affirmative determination that the event was the result of a backup of MGSID facilities, and that none of the following circumstances apply:

- (A) The loss was the result of a force majeure including but not limited to acts of God, acts of public enemies, insurrections, riots, war, landslides, lightning, earthquakes, fires, storms, floods, washouts, droughts, civil disturbances, explosions, acts of terrorism, sabotage, or any other similar cause or event not reasonably within MGSID's control;
- (B) The loss was caused by either an act or omission of the property owner, the property owner's agent, or a member of the property owner's family or business;
- (C) The property owner failed to file a claim hereunder in a timely manner, or failed to comply with any other procedural requirements of this Policy;
- (D) The loss is the result of intentional or negligent acts of third parties; or
- (E) The loss is wholly covered by private insurance.

Reduction in Assistance:

MGSID may limit any assistance, or reduce any payment, under this Policy based upon any of the following:

- (A) The property owner did not act responsibly to prevent, avoid or minimize the loss;
- (B) The property owner is unable to fully substantiate or document the extent of the loss;
- (C) The loss is partially covered by private insurance.

Maximum Payments:

Without the express action of the MGSID Board of Trustees, no assistance or payment under this Policy may exceed any of the following:

- (A) One Thousand Dollars (\$1,000.00) per application or location; or
- (B) One Thousand Dollars (\$1,000.00) per incident. Should a catastrophic event occur, the \$1,000.00 per incident limitation will be prorated against all losses where assistance is requested unless additional funding is approved by the MGSID Board.

Payment Does Not Imply Liability:

Any assistance or payment made under this Policy shall not be construed as, and does not imply, an admission of negligence or responsibility on the part of the MGSID for any damage or loss. Any assistance or payment made under this Policy is strictly voluntary on the part of MGSID. This Policy shall not in any way supersede, change or abrogate the state government immunity act, Utah Code Annotated, section 63-30-1 et seq., as amended, or its successor, and its application to MGSID, or establish in any person a right to sue MGSID under this Policy. Any assistance or payment made under this Policy and accepted shall constitute a full and complete release of any and all claims against the MGSID, its officers, employees and agents arising from the incident.

Budget Expenditures:

MGSID authorizes a fund from which amounts may be drawn to make the foregoing assistance or payments. Such fund may be established from the ordinary rate structure of MGSID.

Claims from Other Governmental Agencies:

Notwithstanding any other provisions of this Policy, no application shall be accepted from the United States or any of its agencies, the State of Utah or any political subdivision.

END MGSID SSMP

**MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT
Sanitary Sewer System Defect Report**

Date: _____

Time: _____

Location of Defect: _____

Identified By: _____

Description of Defect: _____

Urgency of Needed Corrective Action:

_____ **Immediate Action Required**

_____ **Repair of Correct Soon**

_____ **Problem Stable**

_____ **No Immediate Action Needed**

Recommended Remedial Action: _____

MOUNTAIN GREEN SEWER IMPROVEMENT DISTRICT

Log of Contact with Other Agencies/People

Location of SSO: _____ Date of SSO: _____

AGENCY	PHONE NUMBER	CONTACT MADE YES/NO	TIME	REMARKS
Utah DWQ	801-536-4300 or 801-231-1769			
Weber-Morgan Health Dept.	801-399-7100			
Utah DERR	801-536-4123			
Morgan Co Sheriff	801-829-0590			
Mountain Green Fire	801-876-2277			
Highlands Water	801-876-2510			
Cottonwood Water	801-876-3895			
US EPA Region VIII	Consult with DWQ			
OTHER CONTACTS:				
CONTACT MADE WITH	PHONE NUMBER	CONTACT MADE YES/NO	TIME	REMARKS