



COLORADO
Department of Public
Health & Environment

IMPLEMENTATION POLICY

Clean Water Program
Policy Number: CW-14

Regulation No. 22 - Site Location and Design Regulations for Domestic Wastewater Treatment Works (5 CCR 1002-22)

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Signatures:

_____ Nicole Rowan, CW Program Manager

_____ Meg Parish, Permits Section Manager

_____ Bret Icenogle, Engineering Section Manager

TABLE OF CONTENTS

TABLES AND FIGURES	vi
ABBREVIATION LIST	vii
I. BACKGROUND INFORMATION	1
A. Regulatory Framework	1
B. Purpose of the Policy.....	1
II. GENERAL INFORMATION	2
A. Organization of this Policy	2
B. When Site Location and Design Approval is Required	2
C. The Site Location Application and Design Review Processes	4
D. Fees Required for Site Location Applications and Design Reviews.....	6
E. Ensuring a Consistent, Complete, and Adequate Submittal.....	7
22.1 SCOPE AND PURPOSE	<u>109</u>
22.2 DEFINITIONS	<u>1140</u>
22.3 DECLARATION OF POLICY FOR THE SITE LOCATION DECISION PROCESS	<u>2726</u>
22.3(1)(a) Consideration of Local Long-Range Comprehensive Plans	<u>2726</u>
22.3(1)(b) Managed to Minimize the Potential Adverse Impact on Water Quality	<u>2827</u>
22.3(1)(c) Encourage the Consolidation of Wastewater Treatment Works	<u>2928</u>
22.4 PROCEDURES FOR THE SITE LOCATION DECISION PROCESS	<u>3332</u>
22.4(1) Facilitating a More Effective and Timely Review among the Review Agencies	<u>3332</u>
22.4(2) Facilitating a More Effective and Timely Review among Planning Agencies	<u>3332</u>
22.4(3) Adoption of Policies by the Commission and Division.....	<u>3332</u>
22.4(4) Burden of Applicant to Supply Information.....	<u>3332</u>
22.4(5) Goal to Make a Decision on Complete Applications	<u>3433</u>
22.4(6) Reasons for Denial of an Application	<u>3433</u>
22.4(7) Site Location Approval.....	<u>3534</u>
22.4(8) Requirement of Other Approvals.....	<u>3534</u>
22.4(9) Effective Date of Approval and Expiration	<u>3534</u>
22.4(10) Public Notice of Site Location Decision.....	<u>3635</u>
22.4(11) Written Notice of Site Location Decision.....	<u>3635</u>
22.4(12) Appeal of the Site Location Decision.....	<u>3736</u>
22.4(13) Local Agency Review Timelines in the Event of an Emergency	<u>3736</u>
22.4(14) Local Agency Review Requirements for Design Capacity Changes After Site Location Decision.....	<u>3736</u>
22.5 FACTORS TO BE CONSIDERED FOR DIVISION OR COMMISSION DECISION MAKING ON SITE LOCATION APPLICATIONS.....	<u>3938</u>
22.5(1)(a) Legally Responsible Person and Legal Description of the Site	<u>3938</u>
22.5(1)(b) Connecting New or Expanded Lift Stations or Interceptors	<u>3938</u>
22.5(1)(c) Consideration of Treating Wastes in an Area-Wide Facility	<u>4039</u>
22.5(1)(d) Relationship to and Potential Impact on Any Water Supply Intake	<u>4039</u>
22.5(1)(e) Location of Proposed Project Relative to Flood Plains or Other Natural Hazard	<u>4244</u>

22.5(1)(f) Foreseeable Potential Adverse Impacts on Public Health, Welfare, and Safety.....	<u>4342</u>
22.5(1)(g) Proper Public Notice and Any Public Comment	<u>4645</u>
22.5(1)(h) Ability of Proposed Treatment Plant to Meet Effluent Limitations or Applicable Water Quality Planning Targets	<u>4645</u>
22.5(1)(i) Review and Comment of All Required Local Government Agencies and 208 Designated Planning and Management Agencies	<u>4645</u>
22.5(1)(j) Long-Range Comprehensive Planning as it Affects Water Quality	<u>4746</u>
22.5(1)(k) Regional Water Quality Management Plan	<u>4746</u>

22.6 APPLICATION PROCEDURES FOR CONSTRUCTION OF NEW DOMESTIC WASTEWATER

TREATMENT PLANTS.....	<u>5049</u>
22.6(1) Submittal Requirements/Expectations.....	<u>5049</u>
22.6(1)(a) Availability of Submittal Forms	<u>5150</u>
22.6(1)(b) Engineering Report	<u>5150</u>
22.6(1)(b)(i) Service Area Definition	<u>5150</u>
22.6(1)(b)(ii) Evaluation of Site and Treatment Alternatives	<u>5554</u>
22.6(1)(b)(iii) Water Quality Planning Targets	<u>5554</u>
22.6(1)(b)(iv) Analysis of Existing Facilities within the Applicant’s Service Area.....	<u>5756</u>
22.6(1)(b)(v) Consolidation Analysis	<u>5857</u>
22.6(1)(b)(vi) Natural Hazards Analysis.....	<u>5857</u>
22.6(1)(b)(vii) Geotechnical Conditions	<u>5857</u>
22.6(1)(b)(viii) Selected Alternative Discussion	<u>6059</u>
22.6(1)(b)(ix) Legal Arrangements Showing Control of the Site	<u>6160</u>
22.6(1)(b)(x) Institutional Arrangements.....	<u>6362</u>
22.6(1)(b)(xi) Management Capabilities	<u>6362</u>
22.6(1)(b)(xii) Financial System	<u>6463</u>
22.6(1)(b)(xiii) Implementation Schedule	<u>6665</u>
22.6(1)(b)(xiv) Operations and Maintenance	<u>6665</u>
22.6(1)(c) Notice of Intent to Construct.....	<u>6766</u>
22.6(1)(d) Capacity Sharing Agreements	<u>6867</u>
22.6(1)(e) Consistency with Regional Water Quality Management Plan.....	<u>6968</u>
22.6(2) Submittal of Application for Agency Reviews	<u>6968</u>
22.6(3) Public Notification.....	<u>7069</u>

22.7 APPLICATION PROCEDURES FOR INCREASING OR DECREASING THE DESIGN CAPACITY OF AN EXISTING DOMESTIC WASTEWATER TREATMENT PLANT WHERE CONSTRUCTION HAS TAKEN PLACE OR WILL TAKE PLACE

.....	<u>7170</u>
22.7(1) Submittal Requirements/Expectations.....	<u>7170</u>
22.7(1)(a) Availability of Submittal Forms	<u>7274</u>
22.7(1)(b) Engineering Report for Decrease in Design Capacity to 2,000 gpd or Less.....	<u>7274</u>
22.7(1)(b)(i) Service Area, Population, and Loading Changes	<u>7274</u>
22.7(1)(b)(ii) Loading, Capacity, and Performance Analysis of Existing and Proposed Treatment Works.....	<u>7675</u>
22.7(1)(b)(iii) Description of Proposed Modifications	<u>7675</u>
22.7(1)(b)(iv) Management Capabilities	<u>7776</u>
22.7(1)(b)(v) Evidence of Coordination with the Local Public Health Agency.....	<u>7776</u>
22.7(1)(c) Engineering Report for Increase or Decrease in Design Capacity.....	<u>7776</u>
22.7(1)(c)(i) Service Area, Population, and Loading Changes.....	<u>7776</u>
22.7(1)(c)(ii) Water Quality Planning Targets	<u>8180</u>

22.7(1)(c)(iii) Loading, Capacity, and Performance Analysis of Existing Treatment Plant	<u>8382</u>
22.7(1)(c)(iv) Analysis of Treatment Alternatives	<u>8382</u>
22.7(1)(c)(v) Financial System Changes	<u>8483</u>
22.7(1)(c)(vi) Implementation Schedule.....	<u>8685</u>
22.7(1)(c)(vii) Geotechnical Conditions	<u>8685</u>
22.7(2) Submittal of Application for Agency Reviews	<u>8887</u>
22.8 SITE LOCATION APPLICATION PROCEDURES FOR INTERCEPTORS AND CERTIFICATION	
PROCEDURES FOR ELIGIBLE INTERCEPTOR SEWERS.....	<u>9089</u>
22.8(1) Interceptors Eligible for Certification	<u>9089</u>
22.8(2) Interceptor Eligible for Certification Submittal Requirements/Expectations.....	<u>9294</u>
22.8(3) Interceptors Not Eligible for Certification Submittal Requirements/Expectations	<u>9594</u>
22.8(3)(a) Availability of Submittal Forms	<u>9695</u>
22.8(3)(b) Engineering Report	<u>9695</u>
22.8(3)(b)(i) Map Identifying the Site.....	<u>9695</u>
22.8(3)(b)(ii) Service Area, Population, and Loading Projections.....	<u>9695</u>
22.8(3)(b)(iii) Final Legal Arrangements Demonstrating Control of the Site	<u>10099</u>
22.8(3)(b)(iv) Identification of the Treatment Entity	<u>101400</u>
22.8(3)(b)(v) 208 Designated Planning and Management Agency(ies) Confirmation(s)	<u>103402</u>
22.8(3)(b)(vi) Implementation Schedule	<u>103402</u>
22.8(3)(b)(vii) Financial Capacity	<u>103402</u>
22.8(3)(c) through 22.8(3)(e) Submittal of Application for Agency Reviews	<u>105404</u>
22.8(4) and 22.8(5) Modifications to a Site Location Approval Prior to Completion of Construction	<u>106405</u>
22.9 APPLICATION PROCEDURES FOR LIFT STATIONS	<u>107406</u>
22.9(1) Submittal Requirements/Expectations.....	<u>107406</u>
22.9(1)(a) Availability of Submittal Forms	<u>108407</u>
22.9(1)(b) Engineering Report	<u>108407</u>
22.9(1)(b)(i) Map Identifying the Site.....	<u>108407</u>
22.9(1)(b)(ii) Service Area, Population, and Loading Projections.....	<u>109408</u>
22.9(1)(b)(iii) Identification of the Treatment Entity.....	<u>112411</u>
22.9(1)(b)(iv) Legal Arrangements Showing Control of the Site	<u>112411</u>
22.9(1)(b)(v) Wastewater Treatment Entity Statement	<u>114413</u>
22.9(1)(b)(vi) Operation and Maintenance.....	<u>115414</u>
22.9(1)(b)(vii) Management Capabilities	<u>115414</u>
22.9(1)(b)(viii) Financial System.....	<u>116415</u>
22.9(1)(b)(ix) Emergency Operations Plan	<u>117416</u>
22.9(1)(b)(x) Implementation Schedule	<u>117416</u>
22.9(1)(b)(xi) Public Notification	<u>117416</u>
22.9(1)(c) and 22.9(1)(d) Submittal of Application for Agency Reviews	<u>118417</u>
22.9(1)(e) Consistency with Regional Water Quality Management Plan.....	<u>119418</u>
22.10 APPLICATION PROCEDURES FOR AMENDMENT OF EXISTING SITE LOCATION	
APPROVAL	<u>120419</u>
22.10(1) Submittal Requirements/Expectations	<u>122421</u>
22.10(1)(a) Availability of Submittal Forms.....	<u>123422</u>
22.10(1)(b) Evaluated Need for Permit Modification or Request for Chemical Evaluation Form.	<u>123422</u>
22.10(1)(c) Engineering Report	<u>123422</u>

22.10(1)(c)(i) Description of Proposed Project	<u>123122</u>
22.10(1)(c)(ii) Map Identifying the Site	<u>124123</u>
22.10(1)(c)(iii) Existing and Proposed Site Plan or Process Flow Diagram	<u>124123</u>
22.10(1)(c)(iv) Loading, Capacity, and Performance Analysis of Existing Treatment Works	<u>124123</u>
22.10(1)(c)(v) Service Area, Population, and Loading Changes	<u>125124</u>
22.10(1)(c)(vi) Impact to Performance of the Treatment Works	<u>128127</u>
22.10(1)(c)(vii) Project Cost and Funding Source	<u>128127</u>
22.10(1)(c)(viii) Impacts to Facility Operator Classification	<u>129128</u>
22.10(1)(c)(ix) Project Schedule	<u>129128</u>
22.10(1)(c)(x) Geotechnical Information for New Structures	<u>130129</u>
22.10(1)(c)(xi) Request for Chemical Evaluation Form	<u>131130</u>
22.10(1)(c)(xii) Outfall Sewer Location	<u>131130</u>
22.10(1)(c)(xiii) Review Agency Notification	<u>132131</u>
22.10(1)(c)(xiv) Water Quality Planning Targets	<u>132131</u>
22.10(1)(c)(xv) Anticipated Future Effluent Limits	<u>134133</u>
22.10(2) Amendment of an Existing Site Location Approval for a Treatment Plant	<u>134133</u>
22.10(3) Amendment of an Existing Site Location Approval for a Lift Station	<u>134133</u>
22.11 APPLICATION PROCEDURES FOR DEMONSTRATION PROJECTS	<u>136135</u>
22.12 IN-KIND REPLACEMENT	<u>142141</u>
22.12(1) In-Kind Replacement Submittal Requirements/Expectations	<u>147146</u>
22.12(1)(a) Availability of Submittal Form	<u>147146</u>
22.12(1)(b) Engineering Report	<u>147146</u>
22.12(1)(b)(i) Existing Domestic Wastewater Treatment Works Information	<u>148147</u>
22.12(1)(b)(ii) In-kind Replacement Details	<u>148147</u>
22.12(3) Eligibility for In-kind Replacement	<u>149148</u>
22.12(4) Location of Project Relative to Existing Site Location Approval	<u>149148</u>
22.12(5) Requested Increase in Design Capacity Based on In-kind Replacement	<u>149148</u>
22.12(6) Conformance with Current Design Criteria	<u>150149</u>
22.12(7) Design Approval Not Required for In-Kind Replacements	<u>151150</u>
22.13 THE DESIGN APPLICATION PROCESS	<u>152151</u>
Two-Step Design Application, Review and Decision Process	<u>152151</u>
One-Step Design Application, Review and Decision Process	<u>154153</u>
Self-Certification Only Processes	<u>156155</u>
Non-Traditional Construction Delivery Approaches	<u>157156</u>
Phased Applications	<u>157156</u>
APPENDIX A SITE LOCATION AND DESIGN APPLICATION FLOW CHART	<u>160158</u>
APPENDIX B COUNTY AND 208 AGENCY LIST	<u>161159</u>
APPENDIX C HISTORICAL LIFT STATION AND INTERCEPTOR INTERIM IMPLEMENTATION	
<u>163161</u>	

TABLES AND FIGURES

LIST OF TABLES

Table 2-1	Application of Multiple Design Flows, Design Capacities, and Tiers Example
Table 2-2	Multiple Outfalls and Design Flows and Seasonal Design Capacity Example
Table 11-1	Pilot and Demonstration Project Categories and Requirements
Table B-1	County and 208 Agency List

LIST OF FIGURES

Figure 2-1	Hypothetical Example for Design Capacity, Design Flow, and Tier
Figure 8-1	Data and Decisions Flowchart Used to Determine Eligibility for Certification
Figure 13-1	Site Location and Design Application Flow Chart
Figure C-1	CEI Process for the Evaluation of Historical Infrastructure

ABBREVIATION LIST

208 Plan	Regional Water Quality Management Plan
ADF	Average Daily Flow
BDR	Basis of Design Report
BOD	Biochemical Oxygen Demand
cBOD	Carbonaceous Biochemical Oxygen Demand
CAP	Corrective Action Plan
CCRs	Covenants, Conditions, and Restrictions
CDPHE	Colorado Department of Public Health and Environment
CEI	Compliance Evaluation Inspection
COD	Chemical Oxygen Demand
Commission	Water Quality Control Commission
Committee	New Technology and Design Criteria Variance Committee
CFR	Code of Federal Regulations
C.R.S.	Colorado Revised Statutes
Department	Colorado Department of Public Health and Environment
Design Criteria	<i>State of Colorado Design Criteria for Domestic Wastewater Treatment Works (WPC-DR-1)</i>
Discharge Permit	Colorado Discharge Permit System Permit
Division	Water Quality Control Division of the Colorado Department of Public Health and Environment
DMR	Discharge Monitoring Report
DORA	Colorado Department of Regulatory Agencies
DWWTW	Domestic Wastewater Treatment Works
FEMA	Federal Emergency Management Agency
gpcd	Gallons per Capita Day
gpd	Gallons per Day
I&I	Inflow and Infiltration
MFE	Multi-Family Equivalent
MGD	Million Gallons per Day
MMF	Maximum Month Average Daily Flow or Maximum Month Flow
OWTS	On-site Wastewater Treatment System
PELs	Preliminary Effluent Limits or Preliminary Effluent Limitations
PDR	Process Design Report
PFD	Process Flow Diagram
PHF	Peak Hour Flow
PIF	Peak Instantaneous Flow
Policy 6	<i>Water Quality Site Application Policy Number 6: Multiple On-site Wastewater Treatment Systems</i>
Regulation 21	<i>Regulation No. 21 - Procedural Rules</i>
Regulation 22	<i>Regulation No. 22 - Site Location and Design Approval Regulations for Domestic Wastewater Treatment Works (5 CCR 1002-22)</i>
Regulation 31	<i>Regulation No. 31 - The Basic Standards And Methodologies For Surface Water (5 CCR 1002-31)</i>
Regulation 43	<i>Regulation No. 43 - On-site Wastewater Treatment System Regulation (5 CCR 1002-43)</i>
Regulation 61	<i>Regulation No. 61 - Colorado Discharge Permit System Regulations (5 CCR</i>

	<i>1002-61)</i>
Regulation 62	<i>Regulation No. 62 - Regulations for Effluent Limitations (5 CCR 1002-62)</i>
Regulation 84	<i>Regulation No. 84 - Reclaimed Water Control Regulation (5 CCR 1002-84)</i>
Regulation 100	<i>Regulation No. 100 - Water and Wastewater Facility Operators Certification Requirements (5 CCR 1003-2)</i>
RAS	Return Activated Sludge
SDS	Safety Data Sheet
SFE	Single Family Equivalent
SRF	State Revolving Fund
SSO	Sanitary Sewer Overflow
TIN	Total Inorganic Nitrogen
TMDL	Total Maximum Daily Loads
TN	Total Nitrogen
TOC	Total Organic Carbon
TOD	Total Oxygen Demand
TP	Total Phosphorus
TRC	Total Residual Chlorine
Treatment Plant	Domestic Wastewater Treatment Plant
Treatment Works	Domestic Wastewater Treatment Works
TSS	Total Suspended Solids
WAS	Waste Activated Sludge
WET	Whole Effluent Toxicity
WQBELs	Water Quality Based Effluent Limits
WQPTs	Water Quality Planning Targets

45 **II. GENERAL INFORMATION**

46

47 **A. Organization of this Policy**

48

49 In general, the organization of Regulation 22 is based upon the specific site location
50 application type (i.e., New Domestic Wastewater Treatment Plant, Increasing or
51 Decreasing the Design Capacity of an Existing Domestic Wastewater Treatment Plant,
52 Interceptors, Lift Stations, etc.). Subsequent to this background and general
53 information section, the policy is organized and numbered to be consistent with the
54 specific sections in Regulation 22.

55

56 Forms, flow charts, website links and contact lists referenced in this policy may be
57 modified periodically by the Division, as needed. Additionally, modifications to
58 address changes in the titles or numbering of referenced policies and/or regulations
59 may be made by the Division as necessary to keep this policy as current as possible.
60 These minor revisions will be made by the Division and interested parties will be
61 notified that the policy has been revised via the monthly Water Quality Information
62 Bulletin.

63

64 **B. When Site Location and Design Approval is Required**

65

66 Regulation 22 addresses the following site location application types and other topics:

67

- 68 ● 22.6 New Domestic Wastewater Treatment Plants;
- 69 ● 22.7 Capacity Changes of Existing Domestic Treatment Plants associated with
70 Construction;
- 71 ● 22.8 Interceptors and Certification Procedures for Eligible Interceptor Sewers;
- 72 ● 22.9 Lift Stations (New and Change in Capacity);
- 73 ● 22.10 Amendments of Existing Site Location Approval (Treatment Plants and
74 Lift Stations);
- 75 ● 22.11 Demonstration Projects;
- 76 ● 22.12 In-Kind Replacements; and
- 77 ● 22.13 Design Application Process.

78

79 Based upon the types of site location applications identified in Regulation 22, site
80 location and design approvals for treatment works are required for the following
81 circumstances:

82

- 83 ● Proposed construction of new treatment plants, including on-site wastewater
84 treatment systems (OWTS) that have a design capacity to receive greater than
85 2,000 gallons per day (gpd) of domestic wastewater.
 - 86 ○ Note that vaults are defined as OWTS and require site location and
87 design approval prior to commencement of construction.

- 88 ● Proposed construction related to modifications of existing treatment plants,
89 including OWTS that have a design capacity to receive greater than 2,000 gpd
90 of domestic wastewater. Modifications are considered to include, but are not
91 limited to capacity changes, process changes, new or modified chemical
92 additions, etc.
- 93 ● Proposed construction of new or modified lift stations that have a design
94 capacity to receive greater than 2,000 gpd of domestic wastewater. This
95 includes changes to the rated hydraulic capacity of a lift station, critical
96 components (pumps, wet/dry wells, emergency overflow storage capacity,
97 etc.), and location of an existing lift station.
- 98 ● Proposed construction of new or modified interceptor sewers with a nominal
99 pipe diameter equal to or greater than 24-inches.
- 100 ● Proposed design capacity increases or decreases where no construction has
101 taken or will take place (these are generally called ‘paper re-ratings’), or a
102 change in the design flow portioning that does not change the design capacity.
- 103 ● Proposed re-ratings from a design capacity that is above 2,000 gpd to a
104 capacity that is at or below the 2,000 gpd threshold despite whether
105 construction will take place. Note, this decision at the state level is not
106 intended to supersede the local county/city approvals that may be required for
107 systems that have a design capacity to receive 2,000 gpd or less.
- 108 ● Moving an outfall sewer (discharge point) to a location that has not received
109 site location approval and/or which is proposed to be moved to a different
110 stream segment.
- 111 ● The proposed addition or expansion of a treatment process to generate or
112 store reclaimed domestic wastewater (as defined in *Regulation No. 84 -*
113 *Reclaimed Water Control Regulation* (Regulation 84)) regardless of the
114 location of the added or expanded treatment process (i.e., upstream or
115 downstream of the point of compliance as defined in Regulation 84).
- 116 ● A partial or full change in the type of discharge employed (e.g., from a
117 Category 1 use to a Category 2 use or from a localized system to a centralized
118 system) with regard to reclaimed domestic wastewater (as defined in
119 Regulation 84) regardless of whether construction will take place.
- 120 ● Proposed construction related to changes in the type of discharge from a
121 wastewater treatment plant (surface water to ground water or vice-versa; a
122 partial or complete change from a surface water or groundwater discharge to
123 reclaimed domestic wastewater (as defined in Regulation 84)).
- 124 ● Proposed construction of lift stations for reclaimed domestic wastewater (as
125 defined in Regulation 84) where the proposed lift station is located upstream
126 of the point of compliance (as defined in Regulation 84).
- 127 ● Prior to permanent utilization of Division-authorized demonstration project
128 processes/equipment (after completion of the approved demonstration
129 project).
- 130

131 Due to the compliance implications with regard to State Statute and Regulation 22,
132 applicants are strongly encouraged to review the definitions provided in Section 22.2
133 of Regulation 22.

134
135 There are some limited situations where an OWTS may be present at a site location
136 required to obtain site location approval, but the OWTS would not be required to
137 connect to the central treatment works and could be permitted at the local level.
138 These types of situations include:

- 139
- 140 ● Summer camp with a state permitted treatment works discharging to a stream,
141 and year-round caretaker house on single family OWTS;
 - 142 ● Year-round camp facility with a state permitted treatment works discharging to
143 groundwater, and a year-round director's house on a single family OWTS in a
144 separate location on the property (i.e., away from collection system); and
 - 145 ● Seasonal lodge with a state permitted treatment works using a septic tank and
146 additional treatment and discharging to a stream; and off-season use limited to
147 the proprietor family involves valving to direct off-season wastewater flow
148 from the treatment works to a single family OWTS.
- 149

150 Note, a year-round facility with a state permitted treatment works and lower flows in
151 some months does not go in and out of the state permitting and compliance system.
152 State permit treatment works monitoring and reporting continues for all months.

153
154 The guiding principles for whether a locally-permitted OWTS can also be present on a
155 site location with a treatment works are:

- 156
- 157 ● Surface water discharge is always permitted at the state level;
 - 158 ● OWTS must be a distinctly separate situation. If the seasonal variation involves
159 the same treatment works, the facility will get one state permit, even if the
160 discharge is to groundwater and includes variable flows with months of little or
161 no flow;
 - 162 ● State site location approval letters for state permitted treatment works should
163 identify OWTS for other dwellings; and
 - 164 ● For large properties, OWTS may be added later with local permitting, provided
165 the OWTS are adequately separated from the state permitted treatment
166 system(s) and other OWTS, consistent with Water Quality Site Application
167 Number Policy 6: Multiple On-site Wastewater Treatment Systems.
- 168

169 **C. The Site Location Application and Design Review Processes**

170

171 The site location application is a process that consists of the application, review, and
172 decision. In cases where a design review is required, the design application for a lift
173 station is a one-step process, whereas the design submittal for a treatment plant is a
174 two-step process. Previously, for projects involving treatment plants, the applicant

175 had the choice of submitting the following: 1) a Process Design Report (PDR) and the
176 final design for review and approval; or 2) a PDR for review and approval and a self-
177 certification form where the applicant's engineer verifies conformance with the design
178 criteria. Based on the June 14, 2020 revisions to Regulation 22, the applicant is now
179 required to self-certify the final design, unless at the Division's discretion or when
180 required otherwise by a funding agency. The Division has also removed the
181 requirement for submittal of the Basis of Design Report (BDR) and final plans and
182 specifications for interceptors, and now only requires the submittal of a self-
183 certification form for this type of project. For more in depth information pertaining to
184 the site location and design application processes, please refer to Section 22.13 of
185 Regulation 22, the associated sections of this policy, and the flow charts found in
186 Appendix A.

187
188 As is described in Section 22.13 of Regulation 22, in addition to obtaining site location
189 approval, the applicant must obtain design approval from the Division prior to
190 commencement of construction. Along the same lines, purchasing equipment without
191 having first obtained site location and design approval is performed at the applicant's
192 own risk. If the Division does not approve the site location and/or design application
193 that is based upon the use of such equipment, the applicant will likely be required to
194 replace the equipment.

195
196 Design-Build or Phased Construction

197 Phasing of projects refers to an applicant's request for separation of a project (for a
198 single capacity request) into two or more construction phases. This will enable an
199 applicant to get through the site location approval and a phased design approval
200 process, such that construction on the approved phase can commence, while design
201 review work may be ongoing on other phases. Alternatively, an applicant may go
202 through a single phase design review process for the single design capacity and
203 propose construction phases based on an operational plan. Please refer to section
204 22.13 in this policy for specific information. Note, the Division does not issue site
205 location approvals for phased capacity increases.

206
207 Under unusual circumstances, an applicant may also request phased self-certification
208 for interceptor pipelines that require extended property and easement negotiations
209 with multiple parties. The site location application is intended to demonstrate control
210 of the entire site prior to Division approval, but the Division will consider extenuating
211 circumstances. An applicant should refer to Section 22.13 of this policy for additional
212 requirements and conditions pertaining to the phased construction of interceptors.

213
214 Site Location Approval and Alternative Technologies

215 When a proposed project includes a new/alternative technology (or combination of
216 technologies) that is not specifically covered by the design criteria, the applicant must
217 submit information on the alternative treatment technology to the Division in
218 accordance with Section 1.8.0 of the design criteria. Due to the potential impacts on

219 site location and design approvals, the alternative technology submittal must be
220 presented to the Division either:

- 221
- 222 1. At the same time as the site application. This would be a separate submittal
223 from the site location application, but would be submitted at the same time.
224 This will likely result in a longer period to complete the site location
225 application review process if the Division is not able to accept the alternative
226 treatment technology as proposed, or if other issues with regard to the
227 submittal are identified; or
 - 228 2. Prior to submission of the site application. Submitting the alternative
229 treatment technology for review prior to submitting the site location
230 application is preferred by the Division, as it will reduce or eliminate delays in
231 the site location application review process from potential issues that may
232 arise during the review of the alternative technology submittal.

233

234 The specific requirements associated with alternative technology submittals can be
235 found in Section 1.8.1 of the design criteria. Alternative technology submittals must
236 be directed to the attention of the Engineering Section Unit Manager responsible for
237 the county in which the proposed project will be located. Where the
238 vendor/manufacturer is making the request and there is not yet a project location,
239 the submittal shall be made to the attention of the Engineering Section Manager or the
240 Section's Lead Wastewater Engineer. The contact information for these individuals can
241 be found on the following Division web page under the *Additional information and*
242 *contacts* heading: <https://cdphe.colorado.gov/design>.

243

244 The alternative technology review process is not required as part of the site location
245 application process. However, if the Division receives an application and determines
246 that a proposed treatment technology requires an alternative technology review, the
247 Division will notify the applicant that an alternative technology submittal and review
248 are required. The Division cannot issue site location approval for a technology for
249 which it cannot be conclusively determined will meet the water quality planning
250 targets (WQPTs). As such, site location approvals that are conditioned upon a
251 technology receiving alternative technology acceptance will not be issued.

252

253 **D. Fees Required for Site Location Applications and Design Reviews**

254

255 The Division is authorized to assess fees for wastewater site applications and design
256 reviews in accordance with the provisions of Section 25-8-702 of the *Colorado Water*
257 *Quality Control Act*. The fees for site application and design reviews are set by statute
258 and are based upon the type of project and the associated, proposed hydraulic
259 capacity. All such fees are required to be paid in advance of any work performed by
260 the Division concerning the review of site location applications and design submittals.

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- 265
- Instructions for requesting fee and invoice information for site location application and design reviews, as well as the *Fee Information Request Form* is available on the following Division web page under the *Domestic wastewater submittal forms* heading: <https://cdphe.colorado.gov/water-quality-facility-design-and-approval-forms>.

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There are currently no fees associated with the following types of site location applications or requests:

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- In-kind replacements (Section 22.12);
- Requests for determination regarding whether site location and design approvals are required (Section 22.10(2)(a)(v));
- Demonstration projects (Section 22.11); and
- Design reviews that are not required per statute (i.e., interceptor smaller than 24-inches in diameter, lift station with design capacity less than 2,000 gpd, etc.), but may be required to fulfill state and/or federal project funding requirements.

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Because the fees are set by statute, the Division cannot waive fees for site location application or design review work that is required and performed in accordance with the Statute and Regulation 22.

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E. Ensuring a Consistent, Complete, and Adequate Submittal

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Consistency in the Submittal

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WQPT, site location and design approval, and discharge permit may be part of the process to construct and operate a treatment works project. As part of a sequential process, the applicant shall use a uniform design capacity rating throughout each individual step in the entire process that may include WQPT requests, site location approval, design approval, and the application for a discharge permit. The design capacity rating must be consistent on all forms, reports, applications, and miscellaneous correspondence.

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Hydraulic capacities must be expressed as a rate (volume/time) in million gallons per day (MGD) or gallons per day (gpd). The rate must be provided as the maximum monthly (treatment plants), peak instantaneous (interceptor sewers), or firm pumping capacity (lift stations) loading rates expected at the proposed treatment works, unless a unique condition justifies using a different design loading rate (i.e., attenuation, equalization, and/or instantaneous loading considerations). In those instances where the calculated or constructed actual treatment works capacity is greater than the approved site location design capacity, the discharge permit capacity will reflect the design capacity approved in the site location approval, until such time as the site location approval has been amended or a facility expansion has been approved via the site location application process.

306 If, at the time of design review, it is found that the design application demonstrates a
307 design capacity that is different than that contained in the site location approval, an
308 amendment to the site location approval must be executed for those treatment works
309 or the capacity indicated in the design application must be modified to match that of
310 the site location approval before the Division can issue design approval. If the
311 applicant chooses to pursue a site location application amendment to address the
312 inconsistency in the design capacities, the applicant will be required to go back
313 through the site location application process, and modify the discharge permit, as
314 necessary. Where corrections to previously issued WQPTs, approvals, or permits are
315 required, the applicant shall provide payment of applicable fees, any required
316 signatures, and new applications to meet the regulatory requirements.

317
318 Requirements for a Complete and Adequate Submittal

- 319
- 320 ● Include completed versions of all of the necessary forms and checklists.
 - 321 ● Ensure that all of the requirements of Regulation 22 are adequately addressed
322 for site location applications and the design criteria for design applications.
 - 323 ● The review time(s) required for local and 208 planning and management
324 agencies may differ greatly from that of the Division, especially where
325 regulated nutrient allocations are involved. Be sure to contact these review
326 agencies as early as possible so that this time can be accounted for in the
327 overall project planning work. Also, for interceptor and lift station projects,
328 where the treatment entity and any intermediary conveyance municipality is
329 required to provide confirmation that they will accept, convey, and/or treat
330 the domestic wastewater from the proposed treatment works, the applicant
331 should allow adequate time for the treatment entity and municipality to review
332 the project and provide the necessary certification for the site location
333 application.
 - 334 ● Ensure that all of the necessary signatures for local and 208 planning and
335 management agencies (where applicable) are included on the forms and that
336 the original signatures are submitted to the Division.
 - 337 ● One (1) electronic copy (i.e., sealed and signed) should be submitted to the
338 Division for review and approval to the following email address:
339 CDPHE.WQEngReview@state.co.us.
 - 340 ● If the project will involve an alternative technology (not currently included in
341 the design criteria), do not wait to submit the alternative technology
342 submittal, because it could result in delays during the site location and/or
343 design application processes.
 - 344 ● For in-kind replacements, if the applicant is unsure whether a replacement
345 would be considered in-kind, it is suggested that the applicant submit the in-
346 kind replacement written notification to the Engineering Section Unit Manager
347 for the county in which the project is located prior to equipment installation.
- 348

349 If you have any questions about the application process, please contact the
350 Engineering Section Unit Manager for the county in which the project is located. The
351 contact information for these individuals can be found on the following Division web
352 page under the *Additional information and contacts* heading:
353 <https://cdphe.colorado.gov/design>.

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SECTION-SPECIFIC IMPLEMENTATION

The Section Names and Numbers indicated below correspond exactly to those in Regulation 22 itself, for ease in reference.

22.1 SCOPE AND PURPOSE

Regulation 22 and this policy only apply to construction of treatment works, including treatment plants, OWTS, lift stations, and certain interceptor sewers with a design capacity to receive greater than 2,000 gpd of domestic wastewater, as well as certain facilities that produce reclaimed domestic wastewater.

365 **22.2 DEFINITIONS**

366

367 The June 2020 revisions included a number of changes to Section 22.2, *Definitions*. Many of
368 these definitional updates relate closely to specific types of site location applications and are
369 integral to the review of the application. At the risk of altering or detracting from the
370 meaning of the term, this section repeats the exact definition from Regulation 22, and
371 definitional interpretations and nuances are discussed within the section specific
372 implementation, with the exception of “design capacity.” A discussion of design capacity
373 follows the list of definitions describing the implementation and relationship of design
374 capacity, design flow, and tiers.

375

376 A list of new or modified definitions included in the current revision of Regulation 22 are
377 provided below:

378

- 379 ● “Approval” means the final action (decision) of the Water Quality Control Division
380 approving a site location application, certification, or design. Except for in-kind
381 replacements and demonstration projects, a site location approval shall specify the
382 location and, in general, the type of domestic wastewater treatment works being
383 approved and its design capacity. For in-kind replacements, a site location approval
384 specifies the components that meet the definition of in-kind replacement. This action
385 may take the form of an approval, acknowledgement of certification (for
386 interceptors), or acknowledgement of in-kind replacement. In any case, the approval
387 may include conditions of approval;
- 388 ● “Construction” means entering into a contract for the erection or physical placement
389 of materials, equipment, piping, earthwork, or buildings which are to be part of a
390 domestic wastewater treatment works. Should an entity elect to build the
391 improvements with in-house work forces, instead of contracted work forces, then
392 construction shall be considered to begin when the entity initiates any action towards
393 the erection or physical placement of materials, equipment, piping, earthwork, or
394 buildings which are to be part of a domestic wastewater treatment works. When an
395 entity enters into a contract for a non-traditional construction delivery approach, such
396 as but not limited to, design-build or construction manager at risk, the portion of the
397 contract covering preparation of the site application and/or design, including
398 obtaining Division review and decision of the site location and design applications, is
399 not “construction” and initiation of such activities by the entity is in conformance with
400 this regulation;
- 401 ● “Demonstration Project” means testing of an individual process, technology, or
402 chemical, or combination(s) of processes, technologies, and/or chemicals at an
403 existing facility that has previously obtained site location and design approval.
404 Demonstration projects occur at a scale, location in the process, or configuration that
405 may have the potential to affect water quality or treatment capabilities. Sufficient
406 testing and data are needed to support an alternative technology application. Where
407 that data does not already exist, is not applicable to, or cannot be correlated to
408 accommodate Colorado-specific conditions, such as extreme temperatures and high-

- 409 altitude facility installations, Colorado-specific testing and data may be needed to
410 support an alternative technology application and a demonstration project may be
411 required. Demonstration projects require site location approval prior to
412 commencement of construction, operation, and testing. Any Division determination
413 regarding whether a project is a demonstration project is separate from a Division
414 determination of permit compliance and whether a permit modification is required;
- 415 ● “Design Capacity” means a domestic wastewater treatment works’ capability to
416 receive a specific domestic wastewater flow and/or pollutant load while meeting the
417 water quality planning target(s), as applicable. The term ‘design capacity’ applies to
418 domestic wastewater treatment plants, onsite wastewater treatment systems, lift
419 stations, and interceptors as follows:
 - 420 (a) Domestic wastewater treatment plant - For a treatment plant, the design
421 capacity is comprised of two components, the hydraulic capacity and the
422 organic loading capacity. The hydraulic capacity shall be given in gallons per
423 day (gpd) or million gallons per day (MGD). The organic loading capacity shall
424 be given in pounds of 5-day biochemical oxygen demand (BOD) per day or
425 carbonaceous biochemical oxygen demand (cBOD) per day. The design capacity
426 for a treatment plant shall generally be expressed as a maximum monthly
427 average. When equalization is present, the hydraulic component of design
428 capacity shall be determined at a point prior to any flow equalization;
 - 429 (b) Onsite Wastewater Treatment System - For domestic wastewater treatment
430 works also considered in accordance with the Regulation 43 - On-site
431 Wastewater Treatment Systems, the proposed design capacity shall generally
432 be expressed as the maximum month average daily flow, at full occupancy;
 - 433 (c) Lift station - For a lift station, the design capacity shall be is expressed as the
434 firm pump capacity (i.e., capacity with largest unit out of service); and
 - 435 (d) Interceptor - For an interceptor, the design capacity shall be is expressed as
436 the peak instantaneous hydraulic flow the interceptor is capable of conveying
437 based on the limiting design conditions at a flow depth over internal diameter
438 ratio of 0.8.
 - 439 For all domestic wastewater treatment works, the design capacity may be expressed
440 using another capacity measure where deemed appropriate by the Division;
 - 441 ● “In-Kind Replacement” means replacement of any process treatment component or
442 hydraulic conveyance component at an existing, approved domestic wastewater
443 treatment works with a similar (i.e., not exactly alike or identical) component as part
444 of normal or emergency replacements to assure continued compliance with applicable
445 site location, design, and permit conditions, including effluent limitations.
446 Replacement or technology upgrades that do not change the original intent of the
447 equipment or structure being renovated, do not impact the design capacity, and do
448 not require the application of alternate design criteria (e.g., change from chemical to
449 ultraviolet light disinfection) qualify as in-kind replacement. In-kind replacement does
450 not include operations and maintenance activities or identical replacements of any
451 process treatment component or hydraulic conveyance component at an existing

- 452 approved domestic wastewater treatment works; these activities may proceed without
453 Division notification or site location approval;
- 454 ● “Lift Station” (pumping station) means a wastewater pumping station that pumps
455 wastewater to a different point when the continuance of the gravity sewer at
456 reasonable slopes would involve excessive depths of bury or that pumps wastewater
457 from areas too low to drain into available sewers. This definition does not include
458 wastewater pumping stations that are designed to receive 2,000 gpd or less of
459 domestic wastewater. Lift stations are appurtenances to domestic wastewater
460 treatment works. Force mains are equipment of lift stations;
 - 461 ● “Management Agency” means a local, regional, or state agency or political subdivision
462 designated by the governor, in consultation with the designated planning agency and
463 in accordance with section 208 of the Federal Clean Water Act and State Law, that is
464 responsible for implementing all or part of an approved regional water quality
465 management plan;
 - 466 ● “On-Site Wastewater Treatment System (OWTS)” means an absorption system of any
467 size or flow, or a system or facility for treating, neutralizing, stabilizing, or dispersing
468 sewage generated in the vicinity, which system is not part of or connected to a sewage
469 treatment works. An OWTS with a design capacity greater than two thousand gallons
470 per day is a domestic wastewater treatment works and subject to this regulation
471 (Regulation 22);
 - 472 ● “Pilot Project” means testing of an individual process, technology, or chemical, or
473 combination(s) of processes, technologies, and/or chemicals at an existing facility that
474 has previously obtained site location and design approval. Pilot projects occur at a
475 scale, configuration, and location in the process that does not qualify as a
476 demonstration project. Examples of pilot projects include short-term equipment
477 testing that does not impact the liquid stream directly or through recycle flows and
478 process optimization to achieve more efficient treatment, reduction in pollutants
479 discharged, or improved water quality and that occurs within the existing treatment
480 configuration authorized under a previous site application. Pilot projects do not
481 relieve permittees from complying with discharge permit requirements. The operation
482 and configuration of pilot projects must be capable of being returned to approved site
483 location and design conditions immediately and without capital construction. Pilot
484 projects do not require site location approval prior to commencement. Any Division
485 determination regarding whether a project is a pilot project is separate from a
486 Division determination of permit compliance and whether a permit modification is
487 required;
 - 488 ● “208 Designated Planning Agency” means an entity designated by the Governor, in
489 accordance with section 208 of the Federal Clean Water Act and State Law, to produce
490 and update a regional water quality management plan;
 - 491 ● “Preliminary Effluent Limitation (PELs)” means effluent limitations developed by the
492 Division, or developed by the applicant for review and approval by the Division when
493 the Division has not met its 180-day goal for certain kinds of PELs, that will serve as
494 the effluent quality guidance for the alternative treatment facilities identified in the
495 site location application and the selected alternative for the final design of the

- 496 domestic wastewater treatment plant. PELs are determined for the proposed design
497 flow and are set at a level such that the proposed treatment facility will not cause an
498 exceedance of applicable water quality standards for those state waters to which the
499 proposed discharge would be made;
- 500 ● “Regional Water Quality Management Plan” means a wastewater management and
501 water quality plan produced in accordance with sections 208 and 303(e) of the Federal
502 Clean Water Act and state law and approved updates to that plan. An areawide water
503 quality management plan identifies a system of treatment plants necessary to meet
504 the anticipated municipal and industrial waste treatment needs of the designated area
505 over a 20-year period;
 - 506 ● “Sewage Treatment Works” means the same as “domestic wastewater treatment
507 works” under section 25-8-103, C.R.S.; and
 - 508 ● “Water Quality Planning Target” means planning limitations issued by the Division.
509 These targets may be derived from the following: preliminary effluent limitation
510 documents, individual or general permits, reclaimed water notices of authorization,
511 and/or water quality assessments. Water quality planning targets are to be used to
512 guide the treatment needs for the alternatives to be considered for evaluation as well
513 as the selected alternative that is proposed in the site location application. Water
514 quality planning targets consider the proposed hydraulic capacity, discharge
515 location(s), reclaimed use(s), technology based limits, applicable water quality
516 standards, and water quality management plan (if any).

517
518 Note, the above list is not inclusive of all the definitions provided in Regulation 22. Thus,
519 applicants are strongly encouraged to review the definitions provided in Section 22.2 prior to
520 submitting a site location application. For additional information regarding the Commission’s
521 intent with regard to definition changes, please refer to the associated Statement of Basis
522 and Purpose language included at the end of Regulation 22.

523 524 **Design Capacity**

525 The term “design capacity” applies to all types of treatment works, including lift stations,
526 interceptor sewers, and treatment plants. For lift stations and interceptors, design capacity
527 represents a single value and may be derived per the definition without complications. For
528 treatment plants, design capacity may be applied with more options and can become
529 complicated, especially when overlapped with design flow and tiers.

530
531 To minimize any potential confusion, this discussion will first describe the following topics:

- 532
- 533 ● Design Capacity, Design Flow, and Tiers;
- 534 ● Limiting the Complexity of Multiple Design Capacities, Design Flows, and Tiers; and
- 535 ● Inflow and Infiltration (I&I).

536 537 **Design Capacity, Design Flow, and Tiers**

538 Design capacity, design flow, and tiers are often confused due to their similar permitting
539 outcomes, but the differences are important and distinct.

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Design Capacity

Design capacity is a parameter established during the site location application process. Design capacity for treatment plants is defined in Section 22.2(8) of Regulation 22. Relevant excerpts from this section are provided as follows:

(8) *“DESIGN CAPACITY” means a domestic wastewater treatment works’ capability to receive a specific domestic wastewater flow and/or pollutant load while meeting the water quality planning target(s), as applicable.*

(a) *Domestic wastewater treatment plant*

For a treatment plant, the design capacity is comprised of two components, the hydraulic capacity and the organic loading capacity. The hydraulic capacity shall be given in gallons per day (gpd) or million gallons per day (MGD). The organic loading capacity shall be given in pounds of 5-day biochemical oxygen demand (BOD) per day or carbonaceous biochemical oxygen demand (cBOD) per day. The design capacity for a treatment plant shall generally be expressed as a maximum monthly average. When equalization is present, the hydraulic component of design capacity shall be determined at a point prior to any flow equalization.

For all domestic wastewater treatment works, the design capacity may be expressed using another capacity measure where deemed appropriate by the Division.

The highlighted phrases within this language help pinpoint key aspects of how design capacity differs from design flow and tiers.

Design capacity has three purposes. First, design capacity is used for determining whether a facility is a treatment works (i.e., is designed to receive >2,000 gpd of domestic wastewater). Second, once the Division determines that the facility meets the definition of a treatment works, the design capacity serves another purpose. The design capacity defines the hydraulic and loading conditions for the technical design. Finally, the design capacity value must be coordinated with the WQPT and the design flow associated with the permit and effluent limits. The Engineering Section reviews the treatment plant according to item 22.3(1)(b) of Regulation 22. Relevant excerpts from this section are provided as follows:

(1) *Based on section 25-8-702(2) C.R.S., in evaluating the suitability of a proposed site location for a domestic wastewater treatment works, the Division shall:*

(b) *Determine that the proposed domestic wastewater treatment works will be managed to minimize the potential adverse impact on water quality and in accordance with the applicable water quality planning targets developed in accordance with subsection 22.6(1)(b)(iii); and*

584 Design capacity has both hydraulic and organic loading components. The organic loading is
585 used as a surrogate of the wastewater's strength and can typically be used to estimate the
586 strength of other domestic pollutants. As noted in the definition, the organic loading may be
587 expressed as BOD or cBOD. These expressions of organic loading align with *Regulation No. 62 -*
588 *Regulations for Effluent Limitations* (Regulation 62). The Division is aware that treatment
589 entities may desire to use other expressions of organic loading, chemical oxygen demand
590 (COD) or total organic carbon (TOC). Per Section 62.5(9) of Regulation 62, the applicant may
591 develop a site-specific relationship between BOD or CBOD and COD, TOC, or total oxygen
592 demand (TOD) for permitting purposes. The Division will work with applicants on a case by
593 case basis to determine if the site-specific relationships have been developed and whether
594 the site location decision will represent these alternate values. Design capacity for treatment
595 plants is typically expressed as the maximum monthly average flow rate and organic loading
596 capacity, but may be expressed using another capacity measure where deemed appropriate.
597 When the treatment plant's service area is a single-use service area (i.e., not primarily from
598 a municipality), the maximum month average hydraulic component is not always the most
599 relevant component. For example, weekend event (e.g., wedding) venues may meet the
600 definition of a treatment works, but unlike municipal service areas, the population, flow, and
601 wastewater strengths may vary. For cases like this, the Division will require development of
602 hydraulic and organic loading for design maximum month average daily flow and loading at
603 full occupancy for functioning days, not including minimalist flow days.

604
605 Treatment plants may contain one or more equalization basins as part of the treatment
606 process to help manage peak flows from the service area, optimize treatment processes,
607 downsize equipment, or manage effluent discharges. Because equalization basins are integral
608 to treatment process sizing, the design capacity definition includes the language "when
609 equalization is present, the hydraulic component of design capacity shall be determined at a
610 point prior to any flow equalization." As an example, an equalization basin at the head of a
611 treatment plant may be used to reduce the peaks and allow all equipment to be downsized.
612 In this case, the equalization is integral to the treatment process sizing, and without an
613 equalization basin, the treatment processes would have to be upsized to accommodate the
614 peak flows into the treatment plant.

615
616 A treatment plant typically receives a single design capacity based on a set of worst-case
617 operating conditions that demonstrate the limiting aspects of treatment. The worst-case
618 conditions may relate to seasonal or monthly effluent limits, operating temperatures, raw
619 wastewater strength, hydraulic loading rates, unit process sizing, seasonal discharges, design
620 population (e.g., build out), or other critical parameters. These parameters are defined on a
621 case by case basis for each application. While a treatment plant typically receives a single
622 design capacity based on the worst-case set of operating conditions, an applicant may request
623 multiple design capacities for a single treatment plant based on the following drivers:

- 624
625 1. Lower winter population and flow versus higher summer population and flow:
626

627 A biological treatment system's performance changes with temperature. Better
628 performance is possible in the summer months due to higher temperatures. If the
629 service area's population and flow decreases during the winter, the summer design
630 conditions may represent the worst-case conditions for sizing the treatment plant. In
631 this case, the applicant may request that the Division consider assigning two design
632 capacities, one for summer and one for winter. The design capacity for wintertime
633 conditions would be established based on the lower population threshold.

634
635 2. Ability to shift flow between two (2) or more treatment plants:
636

637 Some treatment entities own multiple, connected treatment plants. In this case, the
638 treatment entity may optimize the use of the treatment plants by shifting flows
639 between the treatment plants during specific times of the year. The applicant may
640 request the Division consider two design capacities for any of the treatment plants.
641 The request may be limited to a single treatment plant or multiple. This decision will
642 be made on a case by case basis.

643
644 3. Ability to shift between outfalls:
645

646 A treatment plant may have the ability to discharge from more than one outfall (e.g.,
647 groundwater, surface water, reclaimed, etc.). The treatment plant may have a design
648 capacity assigned to each outfall based on the ability of the treatment process to
649 meet the unique WQPTs at each outfall, as long as no design capacity exceeds the
650 planned service area flow rate. In this case, the applicant may request the Division to
651 consider a unique design capacity for each outfall.

652
653 Design Flow

654 Design flow is used in permitting. For reference, design flow is described in Section 61.2 of
655 *Regulation No. 61 - Colorado Discharge Permit System Regulations* (Regulation 61).

656
657 (20) *"DESIGN FLOW" means the hydraulic component of the design capacity as defined*
658 *in Regulation 22. Design flow may be portioned among multiple outfalls.*
659

660 As stated in the definition, the hydraulic component of design capacity typically equals the
661 design flow of the permit. While this relationship holds true for most treatment plants, the
662 design capacity may not equal the design flow when:

- 663
664 1. The treatment plant has an equalization basin as part of the treatment process;
665 2. The treatment plant produces reclaimed water;
666 3. The treatment plant has multiple outfalls; or
667 4. A combination of the previous.
668

669 A treatment plant may have one element or a combination of these elements. This section
670 discusses each of these items independently and then discusses the approach for dealing with

671 the overlapping complexities from multiple elements and configurations. Each of these
672 elements are described in the definition of design flow, included previously, and Sections
673 61.8(2)(f)(i)(A) and 61.8(2)(f)(i)(B) of Regulation 61. The excerpts from this section are
674 provided as follows:

675
676 *(f) Production-based limitations.*

677
678 *(i) In the case of POTWs, permit effluent limitations, standards, or prohibitions*
679 *shall be calculated based on design flow with the following exceptions:*

680
681 *(A) When a facility is a treater for reclaimed water, as defined in*
682 *Regulation 84, the Division can establish permit effluent limitations,*
683 *standards, or prohibitions by subtracting the reclaimed water flow*
684 *capacity, the minimum reclaimed water treated, or a lower amount*
685 *from the design flow of the plant.*

686
687 *(B) When a domestic wastewater treatment works includes flow*
688 *equalization that affects the maximum month average daily discharge*
689 *(or other measure deemed appropriate by the Division), the Division*
690 *may establish permit effluent limitations, standards, or prohibitions*
691 *using the flow as measured after all flow equalization rather than the*
692 *design flow.*

693
694 Equalization Basins:

695 Expanding on the weekend event venue example described previously, the design capacity of
696 the treatment plant, including the equalization basin, is the treatment plant's capacity to
697 receive and treat the wastewater. If the event venue is only open on Thursday through
698 Sunday of each week, this flow may be equalized for and discharged over seven days. In this
699 case, the design capacity is based on the maximum capacity daily flow for a series of events
700 on any operating day, but the design flow for a single outfall from the treatment plant is
701 tempered by a ratio of 4 operating days/7 total days of discharge.

702
703 Reclaimed water:

704 Reclaimed water produced in accordance with Regulation 84 is specifically excluded from the
705 requirements of Regulation 61. Pertinent Sections of 61.14(1) state that "pursuant to this
706 section a permit shall be required for all land application discharges and for all discharges
707 from impoundments unless: (v) land application of reclaimed water is occurring under the
708 provisions of a notice of authorization issued pursuant to Regulation 84, including any return
709 flow." Because reclaimed water use is not considered a discharge to waters of the state if
710 meeting the requirements of Regulation 84, a reclaimed outfall cannot be included as part of
711 the design flow cited as part of a Colorado Discharge Permit System discharge permit
712 (discharge permit). When a treatment plant includes a reclaimed water outfall, the design
713 capacity will consider all wastewater treated by the treatment plant, including wastewater
714 treated to reclaimed standards. Additionally, the design flow may exclude portions of the

715 wastewater treated specifically for reclaimed water uses. As an example, a 1 MGD treatment
716 plant may portion 0.25 MGD of flow year round for reclaimed water uses. In this case, the
717 design capacity of the treatment plant equals 1 MGD, but the design flow for discharges to
718 waters of the state equals 0.75 MGD.

719

720 Multiple outfalls:

721 A treatment plant with multiple outfalls, such as groundwater, surface water, and reclaimed
722 water, may have a design flow that differs from design capacity. Design capacity is
723 independent from and not affected by the number of outfalls, as long as the total design flow
724 of all outfalls is equal to or greater than the design capacity. With the exception of reclaimed
725 water and equalization, if the total design flow of all outfalls proposed is less than the
726 requested design capacity, the design capacity will be limited to the total design flow of all
727 outfalls. Alternatively, the total design flow of all outfalls may exceed the total design
728 capacity of the treatment plant. Having a total design flow greater than the design capacity
729 of a treatment plant only indicates that the treatment plant has flexible discharge options.
730 The flexibility might be driven by water rights, reuse, or seasonal needs. Any one outfall's
731 design flow may not exceed the design capacity of the treatment plant, except when a
732 facility stores wastewater (raw, partially treated, or treated) to treat and/or discharge at a
733 higher rate and later time.

734

735 Whichever the case, the treatment plant will be reviewed during the site location and design
736 application to ensure the treatment processes have the design capacity to meet the unique
737 effluent limits and design flow at each outfall independently.

738

739 Tiers

740 Tiers are a permitting option that complement design flow. Tiers are described in Section
741 61.8(2)(f)(i)(C) of Regulation 61.

742

743 (f) *Production-based limitations.*

744

- 745 (i) *In the case of POTWs, permit effluent limitations, standards, or prohibitions*
746 *shall be calculated based on design flow with the following exceptions:*

747

- 748 (C) Where the facility design flow and actual flow are significantly
749 different, the Division may implement a tiered approach to setting
750 water-quality-standard-based effluent limitations, provided that one of
751 the sets of effluent limitations reflects the design flow and the
752 permittee demonstrates the ability to meet effluent limitations at the
753 design flow rate. Where such demonstration cannot be made, the
754 permit shall contain a compliance schedule to allow such
755 demonstration within a reasonable time not to exceed the life of the
756 permit (i.e., five years).

757

758 The two (2) underlined phrases within this production-based paragraph help pinpoint key
759 aspects of how a tier differs from design capacity. The first underlined phrase “where the
760 facility design flow and actual flow are significantly different” refers to the flow being
761 received by the treatment plant when compared to the treatment plant’s design flow (which
762 as described above, is generally the design capacity). The second underlined phrase “one of
763 the sets of effluent limitations reflects the design flow and the permittee demonstrates the
764 ability to meet effluent limitations at the design flow rate” indirectly relates to the design
765 capacity.

766
767 Tiers are a second set of effluent limits at a lower hydraulic flow than the design flow. A
768 treatment plant may not be designed based on a tier since effluent limitations at the
769 maximum design flow result in the most stringent WQPTs used for the site location and design
770 applications. In other words, the treatment processes must have the ability to meet the
771 WQPTs at the design capacity under all conditions at the maximum design flow.

772
773 The Permits Section decides whether a tier is available to an applicant. This Permits Section
774 decision is independent from the site location and design application process and may occur
775 before or after a site location and design approval have been issued by the Engineering
776 Section. Treatment plants where the design flow and actual flow are significantly different
777 because of seasonal population fluctuations are potential candidates for tiers, and treatment
778 plants where the design flow and actual flow are significantly different because of seasonal
779 I&I are not considered candidates for tiers.

780
781 **Inflow and Infiltration**

782 Stormwater, groundwater, roof drain connections, and sump pump discharges that enter the
783 sewer collection system are known as I&I. Infiltration occurs as groundwater seeps into sewer
784 pipes and manholes through cracks and joint failures. Inflow occurs through illicit connections
785 and holes in manhole covers. Excessive I&I is often a sign of aging and failing infrastructure or
786 a systematic problem that allows illicit discharges of groundwater or rainwater into the sewer
787 system. Significant I&I may overwhelm the treatment plant, oversize the treatment plant,
788 indicate that exfiltration of untreated sewage may also be occurring, or allow groundwater
789 pollutants (e.g., selenium) to load the treatment plant. The Division does not support
790 accommodating more than incidental I&I through engineering or permitting practices. An
791 applicant may not request design capacity, design flow, or tiers due to I&I. Under discharge
792 permits, permittees are generally required to maintain their collection system and minimize
793 I&I through managerial and infrastructure programs.

794
795 **Limiting the Complexity of Design Flows, Design Capacities, and Tiers**

796 Applying multiple design flows, design capacities, and tiers together adds significant work and
797 complexities to the WQPT development, site location application, design application, and
798 permitting application processes. While a single treatment plant may find opportunities for
799 overlapping dual design capacities, multiple design flows, and tiers, each additional layer
800 multiplies the resources and complicates the complexity of associated decisions, conditions,
801 permits, and authorizations. As an example, consider the following application request:

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- Dual design capacity requested;
- A tier for each design capacity; and
- Treatment plant has 3 outfalls: 1 groundwater, 1 surface water, and 1 reclaimed water.

The following table demonstrates how this application compares to a typical application that includes 1 design capacity, 1 outfall, and no tiers.

Table 2-1 Application of Multiple Design Flows, Design Capacities, and Tiers Example

Application Request	Level of Effort: Treatment plant with 2 design capacities; 3 outfalls; 2 tiers	Level of Effort: Treatment plant with 1 design capacity; 1 outfall; 0 tiers
Water Quality Planning Targets	6 sets of WQPTs; 2 sets (one summer; one winter) for each outfall	1 set of WQPT
Site Location Application	Review of 6 limiting conditions (3 outfalls, each with two operating conditions)	Review of 1 limiting condition
Process Design Application	Review of 6 limiting conditions (3 outfalls, each with two operating conditions)	Review of 1 limiting condition
Final Plans and Specifications	Review of 1 final plans and specifications certification	Review of 1 final plans and specifications certification
Permitting	Development of 8 sets of effluent limits (2 outfalls each with 1 winter; 1 summer; 1 tier winter; 1 tier summer)	Development of 1 set of effluent limits
Notice of Authorization	Development of 2 sets of effluent limits (1 outfall with 1 winter; 1 summer)	Not applicable for this example

813
 814
 815
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 818
 819

Both the number of individual requests and the layering of multiple design flows, design capacities, and tiers quickly increases the efforts and complexity of the regulatory processes. Regrettably, the Division has limited resources to accommodate layered requests for multiple design flows, design capacities, and tiers. Therefore, the Division has limited any single application to the following:

- 820 • An applicant may request no more than two non-overlapping seasonal design
- 821 capacities based on the factors listed above;
- 822 • An applicant may request one set of tiered limits;
- 823 • An applicant may not layer requests for dual design capacities and tiers. An applicant
- 824 may request either dual design capacities or tiers;
- 825 • If justified and accepted by the Division, an applicant may request WQPTs for all
- 826 outfalls and dual design capacities;
- 827 • Tiers are requested in the permit application; and
- 828 • An applicant may request WQPTs and a permit for any number of outfalls.

829

830 **Example**

831 To further clarify, the Division developed a hypothetical treatment plant for discussion
832 purposes only. This example does not cover every nuance possible, but attempts to address
833 many of the more common requests made in applications. For a real application, the
834 treatment entity in this example would have to limit the project's complexity, but these
835 decisions are not highlighted. This discussion will use this single, overly complex example of a
836 treatment plant to help explain the differences between design capacity, design flow, and
837 tiers by following the conceptualization of the treatment plant to construction. The typical
838 treatment entity and applicant might progress through the following steps at a high level:

839

- 840 Step 1: Determine the needed design capacity for the treatment plant for this
- 841 development phase or build out target;
- 842 Step 2: Evaluate water rights requirements;
- 843 Step 3: Define the proposed operating conditions (e.g., flow rates, seasonality, etc.) for
- 844 the service area and outfalls;
- 845 Step 4: Evaluate whether two design capacities should be considered. Discuss the
- 846 possibility of two design capacities with the Division, if needed;
- 847 Step 5: Determine the design flow for the various outfalls;
- 848 Step 6: Obtain WQPTs at the desired design flow for each outfall including reclaimed
- 849 water; and
- 850 Step 7: Design the treatment plant based on each requested design capacity to meet the
- 851 WQPTs based on the desired design flow at each outfall including reclaimed water.

852

853 A diagram of the treatment plant example is shown in Figure 2-1.

854

855 **Step 1:** Determine the design capacity for the treatment plant based on the build out
856 population of the service area.

857

858 This proposed treatment plant supports a year-round camp or retreat headquarters and a
859 summer, weekend only, camp. The administrative building has a maximum build out flow of
860 0.005 MGD. The summer, weekend only (3 days), camp has a maximum build out flow of
861 0.0116 MGD. The total summer average daily flow from the administrative building and camp
862 have a combined flow of 0.0166 MGD, but a cost analysis demonstrated that the treatment
863 entity could downsize the biological treatment processes by installing an equalization at the

864 head of the treatment plant for summertime flows. This equalization basin is sized to accept
865 the three weekend day flows from the camp and average that flow over a period of 7 days.
866 The biological treatment components effectively experience a maximum average daily flow of
867 0.01 MGD (0.005 MGD from the administrative building and 0.0116 MGD*3 days/7 days from
868 the summer, weekend only camp).

869
870 Per Section 22.2(8)(a) of Regulation 22, when equalization is present, the hydraulic
871 component of design capacity shall be determined at a point prior to any flow equalization.
872 The design capacity of the treatment plant at build out must be at least 0.005 MGD for the
873 administrative building plus 0.0116 MGD for the summer camp.

874
875 The requested design capacity of the treatment plant is 0.0166 MGD. The maximum design
876 flow from the treatment plant (all outfalls) is estimated to be 0.01 MGD.

877
878 Step 2: Evaluate water rights requirements.

879
880 The treatment entity has a unique water rights portfolio. A portion of the wastewater must
881 be returned to groundwater; a portion must return to a nearby surface water; and the trans-
882 basin portion may be used to extinction. In addition, the treatment entity has a goal of
883 achieving a Gold or Platinum LEED certification for the administrative building. Water reuse
884 plays a significant role in achieving this LEED certification. The treatment entity wants to use
885 the trans-basin water to extinction within the building for indoor fixture flushing and outside
886 of the building for irrigation. For additional coverage, the treatment entity has also elected
887 to construct an evaporative pond for times when the treatment plant flows are low (e.g.,
888 winter). Evaporation appears to be more cost effective than to treat the wastewater through
889 conventional means at very low flows.

890
891 Step 3: Define the proposed operating conditions (e.g., flow rates, seasonality, etc.) for the
892 service area and outfalls.

893
894 The treatment plant plans included completely discharging the wastewater in case the
895 reclaimed water option needed to be halted for maintenance purposes. In addition, the
896 treatment entity finds that the biological treatment processes may be downsized by managing
897 the use of the outfalls and by requesting two design capacities. Both the outfalls and design
898 capacities would be managed according to the different seasons. The following table outlines
899 the proposed outfalls and their corresponding design flows used to address the seasonal
900 design capacity.

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907

908 **Table 2-2 Multiple Outfalls and Design Flows and Seasonal Design Capacity Example**
 909

Outfall	Winter Design Flow (0.005 MGD)	Summer Design Flow (0.01 MGD)
Indoor Fixture Flushing	0.001 MGD	0.001
Outdoor Irrigation (Cat 1)		0.0025
Groundwater Discharge		0.0025
Surface Water Discharge	0.0025 MGD	0.0075
Evaporation	0.0025 MGD	
Total Available	0.006 MGD	0.0135 MGD

910
 911 Based on these decisions, the treatment entity will revise Step 1 and request the two
 912 following design capacities:

- 913 ● Winter: 0.005 MGD; and
- 914 ● Summer: 0.0166 MGD (please note: equalization reduces the summer time design flow
 915 to a maximum of 0.01 MGD).

916
 917
 918 Step 4: Evaluate whether two design capacities should be considered. Discuss the possibility
 919 of two design capacities with the Division, if needed.

920
 921 Based on the operating plan developed in Step 3, the treatment entity considered whether
 922 two design capacities would benefit the design based on the significant seasonal wastewater
 923 flow differences to the treatment plant. Due to the seasonally high populations in the
 924 warmest months, the biological treatment system’s summer sizing appears to provide
 925 sufficient winter treatment at the lower flow rate. The treatment entity discussed this
 926 decision with the Engineering Section and decided to pursue two seasonal design capacities.

927
 928 Besides reducing the capital expenditures for constructing treatment processes sized for
 929 wintertime temperatures at a design capacity of 0.0166 MGD, the treatment entity expects to
 930 also benefit from more forgiving wintertime ammonia limits at the surface water discharge if
 931 dilution and assimilative capacity is available in the stream.

932
 933 Step 5: Determine the design flow for the various outfalls.

934
 935 The treatment entity requested WQPTs for each outfall, except the evaporation pond, based
 936 on the design flows shown in the table above. Evaporative ponds require approval through the
 937 site location application process, but do not require WQPTs or a discharge permit. The
 938 surface water discharge requires seasonal WQPTs based on the flow rate. WQPTs for all other
 939 outfalls are not impacted by the request for a dual design capacity.

940
 941 Step 6: Obtain WQPTs at the desired design flow for each outfall including reclaimed water.

942

943 The treatment entity must work with the Permits Section to develop WQPTs. The Permits
944 Section's guidance for WQPTs is located on the following Division web page:

945 https://cdphe.colorado.gov/WQ_Planning_Targets_and_PELs.

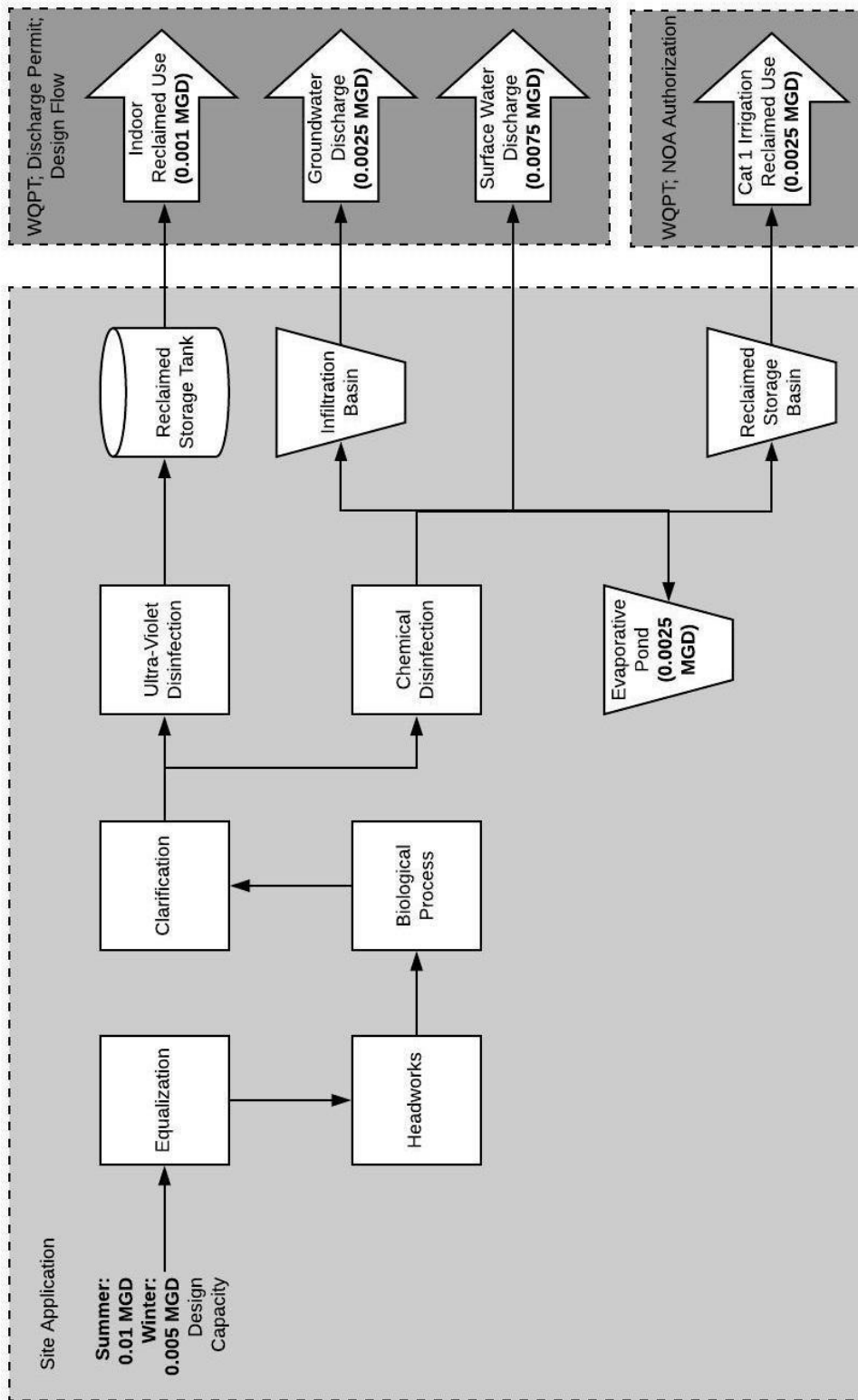
946

947 Step 7: Design the treatment plant based on each requested design capacity to meet the
948 WQPTs based on the desired design flow at each outfall including reclaimed water.

949

950 Once these preliminary steps are complete, the treatment entity may develop and begin the
951 process for the site location and design application process. The Engineering Section is
952 available to discuss this process.

953



954

955 **Figure 2-1. Hypothetical Example for Design Capacity, Design Flow, and Tier**

956 **22.3 DECLARATION OF POLICY FOR THE SITE LOCATION DECISION PROCESS**

957

958 Use of Local and Regional Water Quality Planning Information

959 Regulation 22 discusses how both local long-range comprehensive plans and 208 plans will be
960 used in the site location decision process. The guiding principle in all cases is the intention of
961 the Commission and the Division to have water quality planning issues resolved at the local
962 and regional level, through a public process, prior to an applicant's submission of a site
963 location application (to the Division).

964

965 Sections 22.3(1)(a) and 22.5(1)(k) of Regulation 22 discuss specific considerations for ensuring
966 site location decisions are consistent with local long-range comprehensive and 208 plans.
967 Please note that unless a specific question or issue is raised with regard to a particular
968 aspect(s) of these plans, the Division does not perform a review of the plan as part of the
969 routine site location application process. However, for all site location applications, the
970 Division takes into consideration the factors identified in Sections 22.3 through 22.5 of the
971 regulation.

972

973 Definitions

974 208 plan: a wastewater management and water quality plan produced in accordance with
975 Sections 208 and 303(e) of the Federal Clean Water Act and state law and approved updates
976 to that plan. An areawide water quality management plan identifies a system of treatment
977 plants necessary to meet the anticipated municipal and industrial waste treatment needs of
978 the designated area over a 20-year period.

979

980 Designated planning agency: an entity designated by the Governor, in accordance with
981 section 208 of the Federal Clean Water Act and State Law, to produce and update a regional
982 water quality management plan.

983

984 Local long-range comprehensive plan: the Master Plan adopted by a city, town or county or an
985 amendment to such plan. However, in the event that comprehensive plans overlap the
986 subject property, then the plan developed by the local government having land use
987 jurisdiction over the site shall be given primary consideration.

988

989 Management agency: a local, regional, or state agency or political subdivision designated by
990 the governor, in consultation with the designated planning agency and in accordance with
991 section 208 of the Federal Clean Water Act and State Law, that is responsible for
992 implementing all or part of an approved regional water quality management plan.

993

994 **22.3(1)(a) Consideration of Local Long-Range Comprehensive Plans**

995 In accordance with Section 25-8-702(2) C.R.S., Section 22.3(1)(a) of Regulation 22 requires
996 that Division review of a site location application for a proposed treatment works consider the
997 local long-range comprehensive plans for the area as they affect water quality. Site location
998 approvals must be consistent with the relevant water quality elements of a local long-range

999 comprehensive plan. At a minimum, the site location application shall address consistency
1000 with the local long-range comprehensive plan in the following areas:

- 1001
- 1002 ● Consideration for consolidation,
 - 1003 ● Planning area boundaries,
 - 1004 ● Population projections for planning area,
 - 1005 ● Treatment works service areas,
 - 1006 ● Treatment works location, sizing, and timing,
 - 1007 ● Appropriate effluent limitations, waste load allocations, or total maximum daily loads
1008 (TMDLs), where identified,
 - 1009 ● Agreements among persons to implement the plan, and
 - 1010 ● Other water quality related Issues.

1011

1012 In order to ensure that local long-range comprehensive plans are adequately considered, it is
1013 suggested that the applicant contact the Division early in the site location application process
1014 to discuss approaches for demonstrating consistency with these plans.

1015

1016 Local agencies consisting of counties, cities and/or towns are asked to comment on all site
1017 location applications as they relate to water quality aspects of their long-range
1018 comprehensive plans. Consistency with applicable long-range comprehensive plan aspects is
1019 demonstrated through the local agency's signed recommendation for approval of the site
1020 location application.

1021

1022 For amendments, where notification only (not signatures) of the applicable agencies is
1023 required by Regulation 22, the Division takes into consideration any comments provided by
1024 local agencies and other water quality management agencies (e.g., reservoir Control
1025 Regulation management agencies).

1026

1027 If applicable local agencies do not review or comment and the water quality related planning
1028 questions remain unresolved, the review of the site location application may be delayed as
1029 the Division seeks additional information from the local planning authority and/or applicant's
1030 representative.

1031

1032 **22.3(1)(b) Managed to Minimize the Potential Adverse Impact on Water Quality**

1033 In accordance with Section 22.3(1)(b), the Division is required to “determine that the
1034 proposed domestic wastewater treatment works will be managed to minimize the potential
1035 adverse impact on water quality and in accordance with the applicable water quality planning
1036 targets developed in accordance with subsection 22.6(1)(b)(iii).” As required under Section
1037 22.6(1)(b)(iii) of Regulation 22, the applicant must submit a *Domestic Water Quality Planning*
1038 *Target/PEL Application Form* to the Permits Section in order to determine the WQPTs needed
1039 for the proposed project. The WQPTs are based on the standards adopted by the Commission
1040 to minimize potential impacts from the proposed treatment works on water quality and
1041 health based impacts and providing a basis of design for the project. During the site location
1042 application process, the Division will evaluate the selected treatment alternative to ensure

1043 the technology can reliably meet the limitations defined by the WQPTs or will consider that
1044 the WQPTs can be met through source control including pretreatment. In addition to relying
1045 on the WQPTs established for the proposed project, the Division will rely on the requirements
1046 of Section 22.6(1)(b)(iii) of Regulation 22 and the associated section of this policy to ensure
1047 that the proposed treatment works will minimize any potential adverse impact on water
1048 quality.

1049

1050 **22.3(1)(c) Encourage the Consolidation of Wastewater Treatment Works**

1051 In accordance with Section 22.3(1)(c), the Division is required to “encourage the
1052 consolidation of wastewater treatment works whenever feasible with consideration for such
1053 issues as water conservation, water rights utilization, stream flow, water quality or
1054 economics.” Consolidation potentially offers significant capital and operational cost savings
1055 through economies of scale, reduced points of failure that can lead to sanitary sewer
1056 overflows, and improves management and administration through shared resource
1057 availability.

1058

1059 All engineering reports provided with applications for the construction of treatment works,
1060 which includes treatment plants, lift stations, and interceptor sewers, must include a
1061 discussion of the feasibility of consolidation. The Division shall evaluate the feasibility
1062 analysis with the intent to encourage consolidation, but understands that the Commission
1063 previously revised the provision of Section 22.3(1)(c) to determine consolidation infeasible
1064 based on any one of the identified criteria. A consolidated project should have advantages
1065 over separate projects for water conservation, water rights utilization, stream flow, water
1066 quality, or economics. However, the Statement of Basis and Purpose language of Regulation
1067 22 indicated that the results of any feasibility analysis are not intended to diminish the
1068 consideration that the Division must give to a 208 Plan that specifies a consolidated facility.

1069

1070 Factors precluding consolidation may include, but are not limited to: water rights issues that
1071 limit the applicant’s ability to move the effluent to another location for discharge; reuse
1072 opportunities for the new facility; costs, management or operational limits at the existing
1073 facility; intervening public lands that cannot be crossed (i.e., national park, wilderness area,
1074 etc.); intervening lands that should not be crossed (i.e., wetlands, threatened and
1075 endangered species habitat, or such other categories as may be protected under local land
1076 use policies and/or regulations, etc.); water quality limitations for the receiving waters,
1077 TMDLs, or compliance schedules or advisories for the existing wastewater treatment works; or
1078 significant topographical or geological barriers such as mountain ranges or canyons.

1079

1080 If it is demonstrated to the satisfaction of the Division that any one of the following would
1081 make consolidation infeasible, no further analysis of consolidation is required.

1082

1083 1. **Water Conservation**

1084 If the consolidation of treatment works would preclude reuse opportunities for a new
1085 or existing treatment works or would otherwise impair water conservation efforts of

1086 the new or other affected treatment works, no further analysis of consolidation is
1087 required, but the application must include supporting evidence.

1088 2. Water Rights Utilization

1089 If the consolidation of treatment works would alter the discharge of effluent in a
1090 manner that would impair the water rights of one of the parties to the consolidation
1091 and purchasing alternative water rights or returning the effluent to the original
1092 discharge location is not economically feasible (i.e., in accordance with the economics
1093 evaluation below), no further analysis of consolidation is required. The application
1094 must include supporting evidence.

1095 3. Stream Flow

1096 The applicant shall consider potential situations where another treatment works
1097 discharges to a higher flow stream/river, and consolidation would allow both
1098 treatment entities to take advantage of the associated assimilative capacity. On the
1099 other hand, if the consolidation of treatment works would alter flows in a stream or
1100 stream segment or transfer a sufficient amount of water to another stream or stream
1101 segment so as to result in (1) overwhelming adverse environmental effects on either
1102 stream, or (2) the lowering of the effluent limits of other treatment works so as to
1103 cause the need to install additional, advanced secondary or tertiary treatment
1104 processes, no further analysis of consolidation is required. The application must
1105 include supporting evidence.

1106 4. Water Quality

1107 When analyzing the factors associated with water quality, the applicant shall consider
1108 such things as the water quality-based designation and classification (i.e., recreation,
1109 agricultural, aquatic life, domestic water supply, and wetlands) of a stream segment
1110 along with any associated stream standard, whether the stream segment is an
1111 impaired water and the associated impairment, and the groundwater classification and
1112 associated standards. Based upon these factors, the applicant shall weigh any
1113 potential degradation and take into consideration the ability of the stream segment or
1114 state waters to assimilate the pollutants. Given the assimilative capacity of each
1115 receiving water source and where consolidation would result in an incrementally
1116 greater degradation to the surface water and/or groundwater quality, no further
1117 analysis of consolidation is required, but the application must include supporting
1118 evidence.

1119 5. Economics

1120 Unless another factor contained in the forgoing criteria results in a determination that
1121 consolidation is not feasible, an analysis comparing the cost of consolidating the
1122 treatment works versus the cost of constructing a separate treatment works must be
1123 prepared and included in the submittal. The analysis must include the following costs:
1124 land acquisition, capital construction (including unique expenses such as flood-
1125 proofing, water rights compliance, wetland mitigation, etc.), interceptors and lift
1126 stations, treatment plant expansion and/or upgrade, debt retirement expenses, and
1127 operation and maintenance (O&M) costs for a minimum period of 20 years for each
1128 alternative. Other unique costs that are specific to one or more of the alternatives
1129 under consideration may also be appropriate for inclusion (value of water reuse by the

1130 applicant or through sales to another party, etc.). The applicant is not expected to
1131 include the costs associated with annexing to a municipality or extending other
1132 utilities or infrastructure (e.g., drinking water service, electrical service, roads) to the
1133 associated service area. Cost comparisons must be made on the basis of cost per 1,000
1134 gallons of wastewater treated, as well as the present net worth. If the cost of
1135 consolidation exceeds the cost of separate plant construction by more than 30
1136 percent, no further analysis of consolidation is required. However, along with the cost
1137 comparisons, the application must include correspondence or meeting minutes from
1138 the treatment entities acknowledging discussion of consolidation and the cost
1139 comparisons.

1140

1141 Although not specifically included in Regulation 22, the following items were identified in a
1142 previous policy and could significantly impact the need for or the associated benefits of
1143 consolidation. If after evaluating the previous factors (1-5) and consolidation must still be
1144 considered, the Division expects that the following factors (6-9) will also be considered as
1145 part of the consolidation analysis. As is the case with the previous factors, if it is
1146 demonstrated to the satisfaction of the Division that any one of the following factors would
1147 make consolidation infeasible, no further analysis of consolidation is required.

1148

1149 6. Service Area

1150 If the site location or service area of a proposed treatment works is within the service
1151 area (as defined in an adopted local comprehensive plan or approved 208 plan) of
1152 another municipality providing wastewater treatment service, the applicant (for site
1153 location of the proposed project) should be that municipality, and the application
1154 should provide for consolidation of either treatment works or management and
1155 operation of separate treatment works by the single municipality. If this is not the
1156 case for the proposed project, the application should clearly address the reason(s) for
1157 the departure from this expectation. If the local management agencies (in the case of
1158 an adopted local comprehensive plan) and/or the 208 designated planning agency are
1159 amenable to amendment of the adopted/approved plans to address the project as
1160 proposed, please include the associated documentation (indicating willingness to
1161 amend) from the associated agencies.

1162 7. Distance

1163 If the distance to the closest existing/proposed treatment works, or from a sewer line
1164 capable of carrying the proposed flows to an existing treatment works, is less than five
1165 (5) miles, an analysis of the cost-effectiveness of consolidation with that treatment
1166 works must be included in the submittal. If the distance is five (5) miles or greater, no
1167 further analysis of consolidation is required.

1168 8. Threatened or Endangered Species

1169 If threatened or endangered species inhabit or utilize the only site that could be
1170 utilized for a consolidated treatment works or a site through which interceptor lines
1171 would need to be installed to reach a consolidated treatment works, no further
1172 analysis of consolidation is required, but the application must include supporting
1173 evidence.

1174 9. Local Plans

1175 In the event that the approved 208 plan acknowledges the existence of, or a proposal
1176 for multiple treatment works and recommends that no consolidation of these
1177 treatment works occur, or if consolidation is in direct conflict with a specific
1178 recommendation of a local long-range comprehensive plan or an approved 208 plan,
1179 and the entity responsible for the development of the respective plan recommends
1180 against consolidation, the Division will waive the requirement for the analysis of
1181 consolidation. However, inclusion of multiple facilities in the water quality
1182 management plan does not constitute a recommendation of no consolidation. The
1183 engineering report needs to include a discussion of the approved 208 plan and/or long-
1184 range comprehensive plan.

1185
1186 Note, consolidation should not be limited to entire treatment works. Treatment entities may
1187 also benefit from consolidating portions of the overall treatment operations, such as solids
1188 treatment and handling or administrative duties. Partial consolidation of treatment works are
1189 viable alternatives and must be considered as part of the feasibility study in each application.

1190 **22.4 PROCEDURES FOR THE SITE LOCATION DECISION PROCESS**

1191

1192 **22.4(1) Facilitating a More Effective and Timely Review among the Review Agencies**

1193 The individual application sections of Regulation 22 (e.g., 22.6 through 22.10) require that
1194 the applicant submit all site location applications to local review agencies, including 208
1195 designated planning and management agencies, for review and comment prior to submitting
1196 the application to the Division. Understanding that applicants seek a timely review, the
1197 Commission encourages review agencies to develop and implement coordinated review
1198 processes when possible to create efficient and timely reviews without sacrificing the quality
1199 of the review. Although not specifically mentioned in this section of Regulation 22,
1200 interceptor and lift station projects are required to provide confirmation from the treatment
1201 entity and any intermediary conveyance municipality that they will accept, convey, and/or
1202 treat the domestic wastewater from the proposed treatment works. Due to the potential
1203 impacts to the project schedule, the applicant is encouraged to contact the treatment entity
1204 and any municipality early in the process to allow adequate time for review of the project
1205 and to provide the necessary treatment certification(s).

1206

1207 **22.4(2) Facilitating a More Effective and Timely Review among Planning Agencies**

1208 As stated previously, the individual application sections of Regulation 22 (e.g., 22.6 through
1209 22.10) require that the applicant submit all site location applications to local review
1210 agencies, including 208 designated planning and management agencies, for review and
1211 comment prior to submitting the application to the Division. In lieu of this requirement, a 208
1212 designated planning agency may work with the Division to develop an agreement that
1213 establishes a single, coordinated process that allows for a concurrent review of a site location
1214 application and amendment to the regional water quality management plan. Agreements may
1215 not change any of the Division's decision making authority and are to focus on process
1216 efficiencies that improve timeliness.

1217

1218 **22.4(3) Adoption of Policies by the Commission and Division**

1219 Regulation 22 authorizes the Commission and Division to develop policies in support of the
1220 regulation that interpret regulatory language and clarify implementation practices. The
1221 documents will be used by the Division as a basis for its decisions. The Division has the
1222 primary supporting policies for this regulation:

1223

- 1224 ● *Implementation Policy: Regulation No. 22 - Site Location and Design Regulations for*
1225 *Domestic Wastewater Treatment Works (5 CCR 1002-22);*
- 1226 ● *Water Pollution Control Program Policy Number: WPC-DR-1 State of Colorado Design*
1227 *Criteria for Domestic Wastewater Treatment Works; and*
- 1228 ● *Water Quality Site Application Policy WQSA-6 Multiple Individual Sewage Disposal*
1229 *Systems.*

1230

1231 **22.4(4) Burden of Applicant to Supply Information**

1232 The applicant must fill in the forms completely and accurately prior to submission to the
1233 Division, and should refer to the information provided in Section II.E of this policy to ensure a

1234 consistent, complete, and adequate site location application. The applicant is responsible for
1235 ensuring that the proposed hydraulic and organic design capacities concur with the WQPTs
1236 and intended final design and permitted flow rates prior to submitting the application for site
1237 location approval. All information provided on the application must conform to the
1238 requirements set forth in this policy and other relevant policies and guidance documents.
1239

1240 The Division will not initiate a site location review prior to receiving appropriate fees for the
1241 proposed treatment works, and will not complete a site location decision prior to receiving all
1242 applicable signatures, if required, and providing all review agencies the allotted review times
1243 as indicated in Regulation 22, with exceptions for non-responsive review agencies.
1244

1245 The Division may issue a request for information to the applicant if additional information is
1246 needed to make a decision on the site location application. As with the initial application, the
1247 burden is on the applicant to supply the information necessary to make a decision.
1248

1249 **22.4(5) Goal to Make a Decision on Complete Applications**

1250 Section 22.4(5) of Regulation 22 identifies two review goals specific to site location
1251 applications. For all applications, except in-kind replacements, the Division has a review goal
1252 of 60 days following receipt of a complete application. A complete application consists of an
1253 application form, notification and/or comments from all review agencies, an engineering
1254 report addressing all required elements for the specific site location application type, and fee
1255 payment. For in-kind replacement applications, the Division has a review goal of 30 days
1256 following receipt of a complete application. A complete application for in-kind replacement
1257 applications consists of an application form and an engineering report addressing all required
1258 elements.
1259

1260 While Section 22.4(5) of Regulation 22 indicates that the Division has a 60-day review process
1261 goal, Regulation 22 does not establish response timelines for the applicant. The Division finds
1262 that it cannot act expeditiously when an applicant does not provide an adequate site location
1263 application or adequate and timely responses to requests for information and/or review
1264 comments. The most efficient reviews occur when applicants continually make progress
1265 through the application process once initiated by providing adequate and timely responses. A
1266 quick response prevents the reviewer from having to become reacquainted with a project
1267 after significant stagnant periods.
1268

1269 For clarity, the Division only considers time within its review against the stated goal. The
1270 Division does not include the time that applicants take to respond to requests for information
1271 against the review goals.
1272

1273 **22.4(6) Reasons for Denial of an Application**

1274 The Division attempts to work with applicants to identify ways to work through all site
1275 location application challenges in order to approve or conditionally approve applications. At
1276 times, the Division needs to issue a denial of an application in the form of a written denial
1277 letter to the applicant. The written denial will provide the reasons that the application was

1278 denied and what details the applicant may take to resolve the issue(s), if possible. As an
1279 example, an in-kind replacement application may be denied, because the infrastructure was
1280 originally installed without site location and design approval. In this case, the Division would
1281 issue a denial, indicate that the application does not meet the definition of in-kind, and
1282 specify that the existing unapproved infrastructure and any proposed construction
1283 modifications requires the applicant to obtain site location and design approval.
1284

1285 **22.4(7) Site Location Approval**

1286 Approvals, whether conditional or not, are issued when the site location application meets
1287 the requirements of Regulation 22 and all supporting, applicable policies. Conditions
1288 associated with any approval are binding requirements. The Division's approval shall not be
1289 deemed to be a determination that the proposed treatment works are or are not necessary,
1290 that the proposed site location is or is not the best or only site upon which to locate such a
1291 treatment works, or that the location of a treatment works on the site is or is not a
1292 reasonable public use justifying condemnation of the site.
1293

1294 **22.4(8) Requirement of Other Approvals**

1295 The Division's decision is specific to the site location and design application requirements and
1296 is independent from all other federal, state, and local requirements. The applicant is
1297 responsible for investigating and seeking out all permits and approvals from all other federal,
1298 state, and local persons that have authority over work that may be included in the site
1299 location or design application.
1300

1301 **22.4(9) Effective Date of Approval and Expiration**

1302 As identified in Regulation 22, all site location approvals become effective on the date of the
1303 approval and will expire if construction has not started by a specific date.
1304

1305 **Expiration of Site Location Approval**

1306 Site location application approvals have an expiration date that is specifically included in the
1307 approval letter. The Division uses 18 months from the decision as the standard; however, the
1308 Division has the authority to issue an approval with an expiration date that differs from the
1309 default of 18 months, depending on the specific project and any associated issues or
1310 conditions.
1311

1312 Note, requests for extension of a site location application that has already expired may not
1313 be approved, depending on how long the approval has been expired and the type of domestic
1314 treatment works that is involved (treatment plant, lift station, interceptor, etc.) and the
1315 specific project for which site location approval was issued.
1316

1317 **Site Location Approval Extension**

1318 The applicant is expected to submit a request for a site location application extension
1319 decision at least 60 calendar days prior to the expiration date of the approval, if the project
1320 is not expected to commence construction before such date. This expectation provides time
1321 for the Division to process the request and to issue a decision (i.e., either extension of the

1322 site location approval or denial). The requirements for applying for extension of a site
1323 location approval are provided below:

- 1324
- 1325 1. The applicant must submit a fee request form to the Division for a site location
1326 extension. Information regarding fee requests is provided in Section II.D of this policy.
 - 1327 2. The applicant must submit the request in writing, on the proper form and all
1328 information on the form must be completed. The extension application form is
1329 available on the following Division web page under the *Domestic wastewater submittal*
1330 *forms* heading: [https://cdphe.colorado.gov/water-quality-facility-design-and-](https://cdphe.colorado.gov/water-quality-facility-design-and-approval-forms)
1331 [approval-forms](https://cdphe.colorado.gov/water-quality-facility-design-and-approval-forms).
 - 1332 3. If the associated project required WQPTs, then new or revised WQPTs may be
1333 required. The applicant must submit a *Domestic Water Quality Planning Target/PEL*
1334 *Application Form* to the Permits Section to obtain written confirmation that the
1335 previously-issued WQPTs are still valid. If the Permits Section determines that the
1336 previously-issued WQPTs are no longer valid and that new or modified WQPTs are
1337 required for the proposed project, the Division will not act on the extension request
1338 until the new or revised WQPTs are received by the applicant and submitted to the
1339 Engineering Section, and the Division has determined that the previously approved
1340 project can meet the new or revised WQPTs.
 - 1341 4. If the associated project is a lift station or interceptor, the Division may require that
1342 the receiving treatment entity and any intermediary conveyance municipality be
1343 notified of the extension, and that a new certification from the entity and
1344 municipality to receive, convey, and accept the domestic wastewater be submitted as
1345 part of the extension request prior to the Division's decision of the extension.
- 1346

1347 **22.4(10) Public Notice of Site Location Decision**

1348 The Division publishes a monthly Water Quality Information Bulletin online through the
1349 Division's website, which is available on the following web page:
1350 <https://cdphe.colorado.gov/water-quality-information-bulletin>. All site location and design
1351 decisions that have occurred since the last published Water Quality Information Bulletin are
1352 published within the most recent publication.

1353

1354 **22.4(11) Written Notice of Site Location Decision**

1355 Site location application and design decisions are issued in writing on Department letterhead
1356 (hard copy or electronic). Division decisions are not issued verbally or directly within the body
1357 of an email. Only delegated signatory authorities may sign site location decisions on behalf of
1358 the Division. Most commonly, the Engineering Section Manager signs and issues all site
1359 location application decisions (approvals and denials), based upon the recommendations
1360 made by the review engineer and his/her Unit Manager. The assigned review engineer, under
1361 the direction of his/her Unit Manager, issues and signs design decision letters (approvals and
1362 denials of process designs, basis of design, and final design submittals). Interim
1363 communications regarding site location and design applications are signed and issued by the
1364 review engineer. Interim communications, including requests for information inquiries may be
1365 issued on Department letterhead (hard copy or electronic) or within the body of an email.

1366
1367 Note, the Division does not issue concurrent site location and design approvals. However, if
1368 the design submittal will provide additional clarification or information to the site location
1369 application review process, the applicant may submit the design application prior to site
1370 location approval issuance. Formal review/comment/approval of the design application will
1371 not take place until the design review fee is remitted and site location approval has been
1372 issued. Site location and design approval letters are always made via separate letters.

1373
1374 **22.4(12) Appeal of the Site Location Decision**

1375 Persons adversely affected or aggrieved by the Division's decision on site location or design
1376 applications may appeal the decision to the Commission. The person must submit their appeal
1377 in writing to the Commission's administrator within 30 calendar days from the date when the
1378 Division posts the project's decision in the Water Quality Information Bulletin. The appeal
1379 process will follow the requirements of *Regulation No. 21 - Procedural Rules* (Regulation 21),
1380 Regulation 22, the Colorado Revised Statutes, and the Administrative Procedures Act.

1381
1382 **22.4(13) Local Agency Review Timelines in the Event of an Emergency**

1383 An accelerated review and evaluation process is available for certain emergency events
1384 related to natural disasters (e.g., floods) or certain unforeseen extreme events that may
1385 necessitate accelerated review, such as a fire or explosion at a treatment works that impacts
1386 the treatment works' ability to comply with effluent limits. For clarity, an unforeseen
1387 extreme event does not include perceived emergencies related to planning or implementation
1388 of compliance schedules, construction schedules, enforcement orders, or funding deadlines.

1389
1390 For qualified unforeseen extreme events, the Division will promptly review a site location
1391 application and determine, based on the case-specific facts, whether the circumstances
1392 warrant accelerated review for site location and design. If qualifying for an expedited review,
1393 the applicant will deliver the site location application to the review agencies. The review
1394 agencies have 15 days to provide comments or recommendations on the referral. The 15 day
1395 referral supersedes any other longer referral periods currently identified within the individual
1396 sections of Regulation 22. Any person adversely affected or aggrieved by the Division's final
1397 decision may still appeal that decision as provided in Sections 22.4 and 22.13 of Regulation
1398 22.

1399
1400 **22.4(14) Local Agency Review Requirements for Design Capacity Changes After Site**
1401 **Location Decision**

1402 Applicants may need to modify a treatment works' design capacity following the issuance of a
1403 site location approval, but prior to completion of the design approval process or completion
1404 of construction of the treatment works. Systems seeking to revise the design capacity of a
1405 recently approved site location approval must submit a request to the Division in writing
1406 detailing the following information:

- 1407
1408 1. The proposed change;
1409 2. The requested design capacity; and

1410 3. The impact of the request on the WQPTs, if applicable.

1411

1412 Based on the proposed change, the Division may make the applicant submit a new site
1413 location application. If a new application is not required, the applicant must notify all review
1414 agencies per the initial site location application. The notifications must include the treatment
1415 entity and any intermediary conveyance municipality that have previously agreed to accept,
1416 convey, and/or treat the wastewater from the project. The review agencies shall have 15
1417 working days from receipt of the application to review and comment directly to the Division
1418 unless a brief (less than 15 working days) extension is requested in writing. The Division will
1419 not deem a lack of comments from such agencies within the specified comment period as a
1420 recommendation for denial during its consideration of the application.

1421 **22.5 FACTORS TO BE CONSIDERED FOR DIVISION OR COMMISSION DECISION MAKING ON**
1422 **SITE LOCATION APPLICATIONS**

1423

1424 **22.5(1)(a) Legally Responsible Person and Legal Description of the Site**

1425 The site application and any accompanying reports or documents shall be submitted to the
1426 Division under the control of a person legally responsible for the treatment works. The legally
1427 responsible person shall have decision-making authority (i.e., mayor, president of the
1428 council/board, public works director, owner, corporate officer, authorized official, etc.) with
1429 the business, organization, or municipality, and shall be responsible for signing the site
1430 location application form certifying that they are familiar with the requirements of
1431 Regulation 22.

1432

1433 During a site location application review, the Division will consider the legal description of
1434 the site as a means to define the extents of the site location approval. Depending on the
1435 mechanism used to demonstrate control of the site, the legal description may be included as
1436 part of the deed or title showing ownership of a site. In terms of an easement, the legal
1437 description may be included in the agreement between the property owner and the applicant
1438 defining the applicant's right to utilize specific portions of a property. For existing right of
1439 ways, the legal description may be demonstrated through the agreement with the local
1440 municipality. The legal description will be used for current and future projects to determine
1441 if construction activities fall within the boundary of ownership or control. Based on the type
1442 of site location application required for the project, documentation defining the legal
1443 description of the site may be required.

1444

1445 **22.5(1)(b) Connecting New or Expanded Lift Stations or Interceptors**

1446 When reviewing a site location application for connecting new or expanded lift stations or
1447 interceptors subject to the application requirements identified in Sections 22.8 and 22.9 of
1448 Regulation 22, the Division shall consider and ensure that the receiving treatment works (i.e.,
1449 treatment plant and any intermediary conveyance infrastructure) will not be overloaded by
1450 the additional hydraulic and/or organic load. Whether owned and operated by the applicant
1451 or another treatment entity or municipality, the applicant shall confirm the hydraulic
1452 capacity of any receiving collection system or infrastructure, which may include additional
1453 lift stations and interceptors. The applicant may indicate that the receiving collection system
1454 was designed with capacity allocated to the proposed project through master planning or
1455 other appropriate documents. Otherwise, the applicant shall be required to define the
1456 hydraulic capacity of the receiving collection system, through calculations or hydraulic
1457 modeling, and the current contributing flows. If during the evaluation of the receiving
1458 infrastructure the applicant discovers that historical infrastructure was constructed without
1459 site location and design approval, the applicant shall refer to Appendix C for the interim
1460 policy concerning the evaluation of historical lift stations and interceptors.

1461

1462 As far as the hydraulic and/or organic loading capacity of the receiving treatment plant, the
1463 applicant may rely on the treatment entity to verify available capacity through submittal of
1464 the Wastewater Receiving Entity Certification. This certification shall be submitted with the

1465 site application in accordance with Sections 22.8 and 22.9 of Regulation 22. The capacity of
1466 the receiving treatment works must be confirmed regardless of whether or not the applicant
1467 is the owner of the infrastructure, and if it is determined that the receiving treatment works
1468 will be overloaded as a result of the proposed project, the owner of the infrastructure will be
1469 required to submit a site location and design application to install any necessary
1470 improvements.

1471

1472 **22.5(1)(c) Consideration of Treating Wastes in an Area-Wide Facility**

1473 Based on Section 22.3(1)(a) of Regulation 22, the Division shall consider the local long-range
1474 comprehensive plans for the area as they affect water quality and any approved 208 plan.
1475 Additionally, Section 22.3(1)(c) of Regulation 22 identifies that the Division shall encourage
1476 the consolidation of wastewater treatment works whenever feasible with consideration for
1477 such issues as water conservation, water rights utilization, stream flow, water quality or
1478 economics. These previous sections of Regulation 22 fully consider any local long-range
1479 comprehensive plan, approved 208 plan, and other such issues as they relate to consolidation
1480 or treating wastes at an area-wide facility. Thus, the Division will rely on information
1481 provided for these previous sections to meet the requirements of Section 22.5(1)(c).

1482

1483 **22.5(1)(d) Relationship to and Potential Impact on Any Water Supply Intake**

1484 Continued growth in Colorado has placed increasing pressure on available water resources. As
1485 a result, there are a number of potable water treatment plants that rely upon raw water
1486 diversions which are downstream from treatment plant discharges. The Commission's system
1487 of setting water quality standards includes a water supply classification to address this issue.
1488 The in-stream water quality standards based on the water supply classification are used in
1489 setting discharge permit limits. While protective WQPTs generally reduce the potential for
1490 problems at drinking water treatment processes, there are factors, such as treatment plant
1491 upsets, which should be considered in siting treatment works. The Division is required to
1492 consider water supply protection in accordance with Section 22.5(1)(d) of Regulation 22.

1493

1494 The following expectations are provided to protect the quality of Colorado's drinking water
1495 sources for their intended uses and to aid in the provision of safe potable water to the public.
1496 The expectations are applicable to proposed treatment works that discharge (or propose to
1497 discharge) upstream (within the same stream segment of an existing surface water,
1498 groundwater well under the direct influence of surface water, or infiltration gallery) of a
1499 diversion for a public water system supply.

1500

- 1501 1. WQPTs for the treatment works are developed to protect the stream standards
1502 adopted by the Commission. The engineering report submitted with the site location
1503 application must specify the treatment processes that will be used to meet the
1504 WQPTs. The engineering report shall include a discussion of and provide a map
1505 identifying all drinking water intakes used for domestic purposes within five (5) miles
1506 of the proposed discharge including surface water intakes, groundwater wells under
1507 the direct influence of surface water, and infiltration galleries.

1508 2. The Division will evaluate the location of any type of drinking water intake in relation
1509 to the proposed treatment works when determining the appropriate WQPTs. The
1510 Division encourages discharges from treatment works to be located such that potential
1511 impacts to public drinking water sources are minimized, be they surface or
1512 groundwater under the direct influence of surface water. Where the volume of
1513 effluent to be discharged during low-flow conditions in the stream would make up a
1514 significant portion of the flow in the stream and the proposed treatment works
1515 discharge is near the water supply diversion, proposals for new treatment works must
1516 include, as part of the alternatives analysis, consideration of:

- 1517
- 1518 a. Discharging the wastewater via land application, to an alternate drainage
1519 basin, or to a point downstream from the water supply intake;
- 1520 b. Collection and transmission of wastewater to an existing treatment plant, or
1521 alternate plant site, downstream from the water supply intake;
- 1522 c. The potential for an alternate drinking water source (e.g., groundwater or
1523 connection to another existing water system) for the water supply agency; and
- 1524 d. Relocation of the water supply intake to a point upstream from the treatment
1525 works discharge.

1526

1527 The Division recognizes that water rights issues may limit the feasibility of
1528 implementing such alternatives. If no reasonable alternative to the discharge of
1529 treatment works effluent upstream of the drinking water sources can be found, then
1530 additional considerations to reduce risk of impact to the water supply must be made in
1531 the design and management of the treatment plant to minimize public health risks.

1532

1533 The Division reviews such instances on a case-by-case basis. The Division suggests that
1534 entities involved with such potential circumstances contact the Division early in the
1535 planning process to arrange a meeting to set forth a detailed approach to treatment
1536 works siting and design. Where appropriate, the Division will participate in meetings
1537 between the persons involved.

1538

1539 3. Additionally, special design and operational issues may need to be considered to
1540 address emergency situations (such as an upset) at a treatment works. These may
1541 include, but are not limited to:

- 1542
- 1543 a. Having the capability for flow equalization at the treatment works;
- 1544 b. Having the capability for emergency storage at the treatment works;
- 1545 c. Having the ability to temporarily divert the discharge to an alternate treatment
1546 works or other location during the emergency situation;
- 1547 d. Providing alarm systems to alert operator of upset conditions and/or equipment
1548 issues or failure; or
- 1549 e. Having adequate staffing at the treatment works to facilitate a timely response
1550 to emergency situations.

1551

1552 **22.5(1)(e) Location of Proposed Project Relative to Flood Plains or Other Natural Hazard**

1553 In order for the Division to consider the location of a proposed project relative to floodplains
1554 or other natural hazards and ensure a proposed treatment works be so located that it is not
1555 unnecessarily endangered by natural hazards, the applicant is responsible for identifying
1556 natural hazards such as floodplains, avalanche chutes, soil or rock slide areas, faults, and
1557 expansive soils that may adversely affect the suitability of a site for a proposed treatment
1558 works. Sometimes these hazards can be mitigated through design and construction measures
1559 specifically intended to compensate for the risks presented by the hazard. Where natural
1560 hazards exist, the site location application shall describe the nature and extent of the hazard
1561 and identify how the treatment works will be designed and constructed to mitigate the
1562 potential effects of the hazard (i.e., damage or inaccessibility). In the event of an emergency
1563 caused by a natural hazard, the Division expects that an operator will have uninhibited access
1564 to the proposed treatment works, and lift stations and interceptors will remain capable of
1565 receiving and conveying wastewater from the service area, while treatment plants will
1566 remain capable of receiving, treating, and discharging wastewater. The Division understands
1567 that not every event can be foreseen, and certain events may occur beyond reasonable design
1568 expectations (e.g., flood events in excess of a 1 percent annual chance flood). Additionally, if
1569 a project is being completed as the result of a natural disaster or certain unforeseen extreme
1570 events, the applicant should refer to Section 22.4(13) of Regulation 22 for accelerated review
1571 agency notification requirements.

1572
1573 The site location application shall provide sufficient documentation indicating that the
1574 proposed site and/or treatment works is not encumbered by unmitigated natural hazards. As
1575 an example, the site application shall provide copies of the Federal Emergency Management
1576 Agency (FEMA) flood insurance rate maps showing the flood zone boundary for the 1 percent
1577 annual chance flood (100-year flood event) or other local stormwater comprehensive plans.
1578 For proposed sites and/or treatment works that are located within zones designated by FEMA
1579 as Undetermined Risk Areas, the applicant's engineer shall provide sufficient documentation
1580 to make a professional judgment regarding the likelihood of potential flooding. The
1581 application shall also confirm that other man-made structures in the vicinity of the project do
1582 not increase the risk of natural hazards, such as flooding. The application must include a
1583 discussion on the vertical datum used to compare the floodplain and project site elevations.

1584
1585 As for geological hazards, a professional geologist or a Colorado licensed professional engineer
1586 with an appropriate level of experience investigating geologic site conditions shall address
1587 specific geologic hazards at the proposed site location as part of the geotechnical engineering
1588 report required for new treatment works or new infrastructure associated with existing
1589 treatment works. The engineering report shall further provide sufficient documentation and
1590 discussion of natural hazards at the proposed site location to allow the professional geologist
1591 or a Colorado licensed professional engineer to make a professional judgment that the
1592 proposed design mitigates the potential impacts of any identified hazards.

1593
1594

1595 **22.5(1)(f) Foreseeable Potential Adverse Impacts on Public Health, Welfare, and Safety**

1596

1597 **Guidance Specific to Odor, Noise and Aerosol Mitigation from Treatment Works**

1598 Concerns regarding impacts from a treatment works have been expressed by potential
1599 neighbors in some cases, and it is necessary for the Division to implement a consistent
1600 approach while addressing those concerns and protecting public health and the environment.

1601

1602 Section 22.5(1)(f) of Regulation 22 requires that the Division review site location applications
1603 to ensure that the proposed treatment works can be operated and managed at the proposed
1604 site location to minimize foreseeable potential adverse impacts on the public health, welfare,
1605 and safety as related to wastewater treatment and/or water quality. This section provides
1606 information for reviewing those factors and to specifically:

1607

- 1608 1. Address potential concerns of neighboring property owners to proposed treatment
1609 works construction;
- 1610 2. Reduce the likelihood of public nuisance complaints stemming from the O&M of
1611 treatment works (including odors, noise and aerosols);
- 1612 3. Minimize the potential for the airborne transmission of pathogens from treatment
1613 works to the occupants of nearby habitable structures; and
- 1614 4. Provide guidance if setback requirements provided below cannot be met and
1615 mitigating factors must be incorporated into the design to address potential concerns
1616 from odor, noise, and aerosols.

1617

1618 In considering the approval of new treatment works, existing treatment works where a change
1619 in capacity (expansion or reduction) is requested, or for existing treatment works where other
1620 facility modifications are proposed (i.e., those requiring site location approval per Regulation
1621 22), the Division shall consider distances to habitable structures, which includes residences,
1622 schools, and commercial structures. If impacts to public health or the environment are
1623 projected (e.g., odors detected in accordance with the requirements of the Air Quality
1624 Control Commission *Regulation Number 2 Odor Emission*), the Division may deny approval of a
1625 site location application or, in its approval of a site location application, may impose
1626 reasonable conditions on the design of a treatment works to minimize public health impacts
1627 associated with odors and aerosols.

1628

1629 Incorporating certain design elements can prevent most potential odor, noise, or aerosol
1630 problems at a treatment works. Any mitigation techniques incorporated as a condition of a
1631 site location approval must be included in the design for that treatment works. The applicant
1632 is then required to operate and maintain those mitigation elements or other comparable
1633 equipment or mitigation methods. Applicants must consider potential odor, noise, and aerosol
1634 issues and the potential costs associated with mitigation elements in their site selection
1635 process. Should the responsible party for an existing treatment works allow mitigation
1636 elements required in a site approval to be operated incorrectly or deteriorate in their
1637 effectiveness, the Division may withhold approval of any request for future site location
1638 applications until the mitigation elements are improved to adequate operations.

1639

1640 Odors

1641 Treatment works have the potential for odor generation simply based on the characteristics
1642 of wastewater and the processes used to treat wastewater. It has been demonstrated that
1643 odors generated in a treatment works can be contained and minimized by proper design,
1644 active odor control technologies, and maintaining the appropriate setback distances.
1645 Therefore, it is the applicant's responsibility to consider odor generation in choosing the
1646 location of the treatment works and selecting the processes to convey and treat the
1647 wastewater and mitigate odors. In consideration of setback distances and selection of the site
1648 location, the applicant should also take into account any master planning for the treatment
1649 works, and ensure the boundaries of the site will continue to minimize any potential odors
1650 associated with future projects.

1651

1652 It is difficult to predict where or under what conditions odors may travel; however,
1653 consideration of prevailing winds, localized inversion conditions and other physical
1654 characteristics of the proposed site location and the treatment processes should be assessed
1655 by the applicant.

1656

1657 New Treatment Works

1658 Unless site-specific factors exist, which would tend to amplify odors, the Division will assume
1659 that the following setback distances from the treatment process location to habitable
1660 structures are adequate, and if utilized, then consideration of specific odor control
1661 requirements in the design is not necessary.

1662

- 1663 1. Non-aerated lagoons: 1,300 feet;
- 1664 2. Aerated lagoons less than or equal to two (2) total surface acres (all basins combined)
1665 with no mechanical surface aeration (i.e., equipment that generates splashing, does
1666 not include diffused aeration): 250 feet;
- 1667 3. Aerated lagoons greater than two (2) total surface acres (all basins combined) with no
1668 mechanical surface aeration: 500 feet;
- 1669 4. Aerated lagoons less than or equal to two (2) total surface acres (all basins combined)
1670 with mechanical surface aeration: 500 feet;
- 1671 5. Aerated lagoons greater than two (2) total surface acres (all basins combined) with
1672 mechanical surface aeration: 1,000 feet;
- 1673 6. Mechanical plants 2,000 gpd maximum month capacity to less than 50,000 gpd
1674 capacity: 250 feet;
- 1675 7. Mechanical plants 50,000 gpd capacity to less than 100,000 gpd capacity: 500 feet;
- 1676 8. Mechanical plants 100,000 gpd or greater: 1,000 feet;
- 1677 9. All OWTS and lift stations less than 120,000 gpd design capacity: 100 feet;
- 1678 10. Lift stations 120,000 gpd capacity to less than 250,000 gpd capacity: 250 feet; and
- 1679 11. Lift stations 250,000 gpd capacity or greater: 500 feet.

1680

1681 Note, people are highly variable in terms of sensitivity to odors. Odors are localized and often
1682 dependent on site-specific conditions. Meeting the above setback distances will help minimize

1683 odors, but may not eliminate them completely.

1684

1685 If, after submittal of the application but prior to the site location application decision by the
1686 Division, habitable structures do exist within the setback distances listed above for a new
1687 treatment works, the applicant must commit to incorporating reasonable and appropriate
1688 odor mitigation elements into the treatment works design. In this case, incorporation of odor
1689 control processes into the design shall be a condition of the site location approval letter.
1690 Failure to construct the odor control processes would invalidate the site location approval,
1691 resulting in a violation of the Colorado Water Quality Control Act, pursuant to Section 25-8-
1692 702 C.R.S.

1693

1694 Mitigating elements can include system features designed to prevent odor problems from
1695 occurring such as, but not limited to:

1696

- 1697 1. Aeration system failure alarms with remote notification to an appropriate responsible
1698 party;
- 1699 2. Covering certain portions of the treatment works; and
- 1700 3. Enclosure and an appropriate air handling treatment system (e.g., air filters) for
1701 certain processes that generate odors, such as headworks and solids handling
1702 facilities.

1703

1704 The specific mitigating elements for a particular situation should be developed based on an
1705 analysis of the sequence of events that could lead to odor problems. Design features should
1706 then be developed to interrupt or control the generation of odors, which would negatively
1707 affect nearby habitable structures. Any mitigating elements must be consistent with state and
1708 local ordinances.

1709

1710 Increase or Decrease of Capacity or Amendment of Existing Treatment Works

1711 Where the above setback distances to habitable structures are not met for projects requiring
1712 site location approval, the applicant also has the obligation to consider odors. In the site
1713 location application, reasonable odor mitigation facilities or strategies shall be proposed by
1714 the applicant to reduce the odor potential. Where a new habitable structure(s) has been built
1715 near the original, approved site location boundary after the construction of a treatment
1716 works, the Division and the applicant shall consider whether the proposed changes will
1717 increase the already existing odor levels at those new habitable structures, and whether the
1718 existing treatment works already impacts public health, welfare, and safety as related to
1719 wastewater treatment and/or water quality.

1720

1721 Noise

1722 Noise is generated by large, powered equipment at treatment works including engine
1723 generators, blowers, fans, and mechanical aerators. The variation, pulse, and tone of the
1724 noise can affect the listener as much as or more than the decibel energy of the sound wave.
1725 Mitigation strategies must be employed and consistent with state and local ordinances, and
1726 should focus on equipment selection, acoustical architectural techniques, and the use of

1727 barriers or other sound-wave attenuation measures within buildings, surrounding structures,
1728 and treatment works grounds.

1729

1730 Aerosols

1731 A treatment works site shall be of sufficient size that, under normally expected operating and
1732 climate conditions for the proposed processes, aerosols would not be expected to cross the
1733 property line. Aerosols shall be considered water droplets generated by active treatment
1734 processes in the treatment works. Aerosols do not include fog caused by temperature
1735 differences or odors carried through the movement of air across the property. Where aerosol
1736 drift may be reasonably expected to leave the site, the Division may deny site location
1737 approval or may impose appropriate design requirements as a condition of approval. Where
1738 the treatment processes that generate aerosols are more than 250 feet away from the
1739 habitable structures, the Division will assume that aerosol drift is not an issue, unless the
1740 treatment process proposed would create significant aerosols or the aerosols may create
1741 public health concerns.

1742

1743 22.5(1)(g) Proper Public Notice and Any Public Comment

1744 Per Sections 22.6(3) and 22.9(1)(xi) of Regulation 22, proper public notice is limited to new
1745 lift stations, new treatment plants, and changes in the site boundary of an existing site
1746 location approval for lift stations and treatment plants. The applicant is required to post a
1747 sign on the proposed site location to encourage public notification. The Division will rely on
1748 the posting requirements defined in the above-mentioned sections of Regulation 22 and the
1749 information provided as a result of the public notice to meet the requirements of Section
1750 22.5(1)(g) of Regulation 22.

1751

1752 22.5(1)(h) Ability of Proposed Treatment Plant to Meet Effluent Limitations or
1753 Applicable Water Quality Planning Targets

1754 As required under Section 22.6(1)(b)(iii) of Regulation 22, the applicant must submit a
1755 *Domestic Water Quality Planning Target/PEL Application Form* to the Permits Section in order
1756 to determine the WQPTs needed for the proposed project. The WQPTs are based on the
1757 standards adopted by the Commission to minimize potential impacts from the proposed
1758 treatment works on water quality and health based impacts and providing a basis of design for
1759 the project. During the site location application process, the Division will evaluate the
1760 selected treatment alternative to ensure the technology can reliably meet the limitations
1761 defined by the WQPTs. The Division will rely on the requirements of Section 22.6(1)(b)(iii) of
1762 Regulation 22 and the associated section of this policy to ensure that the proposed treatment
1763 works will be able to meet the existing effluent limitations or applicable WQPTs.

1764

1765 22.5(1)(i) Review and Comment of All Required Local Government Agencies and 208
1766 Designated Planning and Management Agencies

1767 Regulation 22 requires the applicant to provide copies of the site location application and
1768 engineering report to review agencies prior to submission to the Division. The review agencies
1769 will evaluate the application based on each agency's plans, policies, rules and regulations,
1770 which may include the 208 plan for the area should such a plan exist. The applicant must

1771 perform all necessary coordination and supply all information to the review agencies. The
1772 applicant is responsible for obtaining all necessary signatures or documenting the date of
1773 notification on the site application form (depending on the type of site application submittal)
1774 before sending it to the Division. These agencies may include the county, city or town, local
1775 health authority, designated planning and/or management agency, and any other state or
1776 federal agency. These agencies shall review and recommend approval or denial of the site
1777 location application by the Division. The Division will review the signatures and comments
1778 provided by the review agencies in accordance with the type of site application and
1779 associated section of Regulation 22.

1780

1781 **22.5(1)(j) Long-Range Comprehensive Planning as it Affects Water Quality**

1782 Under the previous Section 22.3(1)(a) of Regulation 22, the Division shall fully consider any
1783 local long-range comprehensive plan as it affects water quality when evaluating the
1784 suitability of a proposed site location application. Thus, the Division will rely on information
1785 provided for this previous section to meet the requirements of Section 22.5(1)(j) of
1786 Regulation 22.

1787

1788 **22.5(1)(k) Regional Water Quality Management Plan**

1789 Section 22.5(1)(k) of Regulation 22 requires that the Division rely substantially upon the 208
1790 plan for the area in deciding whether to grant site location approval where the plan is current
1791 and comprehensive with respect to its analysis of population growth and distribution as it
1792 relates to wastewater treatment. In addition, pursuant to Section 25-8-105(3) C.R.S, where
1793 portions of a 208 plan are adopted as regulation, the regulation shall be binding on the
1794 Division decision.

1795

1796 The majority of planning regions in the state have outdated 208 plans in place. The following
1797 sections provide guidance for both situations, those areas with current and comprehensive
1798 208 plans, as well as those with outdated 208 plans.

1799

1800 **Current and Comprehensive 208 Plans**

1801 Site location approvals must be consistent with 208 plans. In order to ensure this consistency,
1802 at a minimum, the site location application shall evaluate the proposal as it relates to the 208
1803 plan in the following areas:

1804

- 1805 ● Consideration for consolidation,
- 1806 ● Planning area boundaries,
- 1807 ● Population projections for planning area,
- 1808 ● Treatment works service areas,
- 1809 ● Treatment works location, sizing, and timing,
- 1810 ● Appropriate effluent limitations, waste load allocations, and TMDLs, where identified,
- 1811 ● Agreements among entities to implement the plan, and
- 1812 ● Other water quality related issues.

1813

1814 In order to ensure that 208 and wastewater utility planning are adequately considered, it is

1815 suggested that the entities involved contact the Division early in the site location application
1816 process to discuss approaches for demonstrating consistency with these plans.

1817
1818 Designated planning and management agencies are asked to comment on all site location
1819 applications as they relate to 208 plans. In planning regions with designated planning
1820 agencies, consistency with the 208 plan is demonstrated through the planning agency's signed
1821 recommendation for approval of the site location application.

1822
1823 In regions without a designated planning agency, the Division may rely on review and
1824 comment provided by a management agency regarding all or part of the 208 plan. In cases
1825 where the management agency is only responsible for implementation of part of the 208 plan,
1826 the Division recommends that the management agency documents coordination of its
1827 comments and recommendation with the other potentially affected management agencies in
1828 the planning region. Consistency with applicable 208 plan aspects is demonstrated through
1829 the management agency's signed recommendation for approval of the site location
1830 application. In these types of cases, the Division is required to rely on the factors identified in
1831 Section 22.5(1)(a) through (i) and the information submitted in the site location application as
1832 additional determinants in making the site location application decision.

1833
1834 For amendments, where notification only (not signatures) of the applicable agencies is
1835 required by Regulation 22, the Division takes into consideration any comments provided by
1836 designated planning and management agencies.

1837
1838 If applicable designated planning and management agencies do not review or comment, the
1839 Division continues the review process and ensures consistency with the 208 plan as required
1840 by subsequent sections of Regulation 22. This may result in the Division seeking additional
1841 information and the site location application may be delayed.

1842
1843 Outdated 208 Plans

1844 In planning regions with outdated 208 plans, the Division expects site location applications to
1845 demonstrate consistency with relevant aspects of other current water quality plans (e.g.,
1846 local long-range comprehensive plans). Applicants should coordinate with local agencies
1847 consisting of counties, cities and/or towns; other water quality management entities (e.g.,
1848 reservoir Control Regulation management agencies); and the Division early in the site location
1849 application process to discuss approaches for demonstrating consistency with these plans.

1850
1851 Local agencies and/or other water quality planning agencies are asked to comment on all site
1852 location applications as they relate to the water quality plan overseen by that agency.
1853 Consistency with the local long-range comprehensive plan or other water quality plan is
1854 demonstrated through the agency's signed recommendation for approval of the site location
1855 application. The Division is also required to rely on the factors identified in Section 22.5(1)(a)
1856 through (i) and the information submitted in the site location application as additional
1857 determinants in making the site location application decision.

1858

1859 For amendments, where notification only (not signatures) of the applicable agencies is
1860 required by Regulation 22, the Division takes into consideration any comments provided by
1861 local agencies and other water quality planning entities.

1862
1863 If applicable water quality entities do not review or comment and the water quality related
1864 planning questions remain unresolved, the review of the site location application may be
1865 delayed as the Division seeks additional information from the planning agency(ies) and/or
1866 applicant's representative.

1867 **22.6 APPLICATION PROCEDURES FOR CONSTRUCTION OF NEW DOMESTIC WASTEWATER**
1868 **TREATMENT PLANTS**

1869

1870 A site location application for *New Domestic Wastewater Treatment Plants* is used for the
1871 following situations:

1872

1873 ● Proposed treatment plants with a design capacity to receive greater than 2,000 gpd of
1874 domestic wastewater, including OWTS;

1875 ● Existing treatment plants intending to add or relocate the currently approved
1876 discharge point (outfall sewer) outside of the currently approved site location for the
1877 plant and/or to a different stream segment. Note, changing the location of the
1878 discharge point within a previously approved site location and within the same defined
1879 segment of the receiving surface water may not require site location approval, as
1880 determined by the Division;

1881 ● Changes to an existing treatment plant that occurs beyond the existing site location
1882 approval, such as expansion of the treatment plant onto an adjacent property not
1883 included as part of the original site location approval;

1884 ● Proposed treatment plants that will produce reclaimed domestic wastewater, if those
1885 treatment plants are to be constructed at a site location that has not been previously
1886 approved, or at a different site from the secondary treatment plant location;

1887 ● Multiple OWTSs each with a design capacity to receive 2,000 gpd or less of domestic
1888 wastewater, but satisfy the criteria of Policy 6; and

1889 ● Construction of a new vault. Note that vaults are allowed by the Division only under
1890 limited circumstances as described in the *Regulation No. 43 - On-site Wastewater*
1891 *Treatment System Regulation* (Regulation 43), and local county
1892 regulations/requirements may preclude vaults completely.

1893

1894 The Division shall review site location applications submitted for all new treatment plants in
1895 accordance with all applicable sections of Regulation 22.

1896

1897 **22.6(1) Submittal Requirements/Expectations**

1898 The applicant shall prepare and submit the following forms and information to the Division:

1899

1900 ● [Fee Information Request Form](#);

1901 ● Domestic Water Quality Planning Target/PEL Application Form;

1902 ● [Section 22.6 - New Domestic Wastewater Treatment Plant](#); and

1903 ● Engineering Report.

1904

1905 The site location application, including the necessary forms, shall be submitted electronically
1906 to the Division using the following email address: CDPHE.WQEngReview@state.co.us. The
1907 Division prefers one (1) complete electronic application, and may request a paper copy for all
1908 or part of the application, as required, to facilitate the review process. The applicant must
1909 fill in the forms completely and accurately prior to submission to the Division. The applicant
1910 is responsible for ensuring the proposed hydraulic and organic design capacities concur with

1911 the WQPTs and intended final design and permitted flow rates prior to submitting the
1912 application for site location approval. All information provided on the application must
1913 conform to the requirements set forth in Regulation 22 and in this policy.

1914
1915 The Division will not initiate a site location review prior to receiving appropriate fees for the
1916 proposed treatment works, and will not complete a site location decision prior to receiving all
1917 applicable signatures and providing all review agencies the allotted review times as indicated
1918 in Regulation 22, with the exception of non-responsive review agencies. The site location
1919 application shall include dated correspondence to each review agency to demonstrate that 60
1920 days was allowed for each review. The site location application must include original ink
1921 signatures, scanned copies of the original signatures, or electronic signatures from the
1922 applicant and review agencies, and comments if provided.

1923
1924 **22.6(1)(a) Availability of Submittal Forms**

1925 As identified above, the forms required for the site location and design application process
1926 are available on the Division's web page. For those applicants who do not have access to the
1927 forms electronically, paper copies can be obtained through the Division's office at 4300
1928 Cherry Creek Drive South, Denver, Colorado 80246-1530.

1929
1930 **22.6(1)(b) Engineering Report**

1931 The applicant shall prepare and submit an engineering report as part of the application
1932 process for site location approval. The engineering report shall be prepared, signed, and
1933 sealed by a State of Colorado licensed professional engineer in accordance with the *Bylaws,*
1934 *Rules and Policies of the State Board of Licensure for Architects, Professional Engineers, and*
1935 *Professional Land Surveyors* issued by the Colorado Department of Regulatory Agencies
1936 (DORA). Regulation 22 specifically states that the engineering report shall describe the
1937 proposed treatment works and demonstrate the applicant's capability to manage and operate
1938 the treatment works over the life of the project. This report shall completely address the
1939 items as identified in each of the Sections 22.6(1)(b)(i) through 22.6(1)(b)(xiv) of Regulation
1940 22 and as guided by this policy. Additionally, the engineering report shall address and allow
1941 the Division to consider the issues discussed in Sections 22.3 and 22.5. Many of the items
1942 required by Sections 22.3 and 22.5 are covered by the information described within
1943 22.6(1)(b). To that extent, the applicant shall refer to Sections 22.3 and 22.5 to ensure all
1944 relevant material is addressed and included in the engineering report.

1945
1946 **22.6(1)(b)(i) Service Area Definition**

1947 The engineering report shall define the boundaries of the service area for the design life of
1948 the proposed treatment works. The service area may be expressed in a variety of ways
1949 depending on the nature of the service area. The service area definition should be supported
1950 with adequate maps, legal property boundaries and descriptions, structures served, and/or
1951 specific land use descriptions. The engineering report shall provide both narrative and visual
1952 descriptions of the service area. As part of the service area definition, the engineering report
1953 shall indicate the proposed location of the treatment works. Depicting topography, local
1954 water bodies, streams, rivers, wetlands, endangered species habitat, domestic wells, drinking

1955 water treatment plant intakes and other treatment works aids with the review of the site
1956 location application, and must also be included on the service area map(s). The map(s) shall
1957 be to scale to allow the Division to determine set-back distances in accordance with
1958 information provided in this policy.

1959
1960 For all cases, the service area must represent the 20-year planning period, or some other
1961 clearly defined future planning period. This planning period must conform to the approved
1962 208 plan and/or the local long-range comprehensive plan. The applicant shall demonstrate
1963 that the service area is consistent with the approved 208 plan and/or the local long-range
1964 comprehensive plan. For additional information pertaining to the use of local and regional
1965 water quality planning information, refer to the information presented in Sections 22.3(1)(a)
1966 and 22.5(1)(k) of this policy. To demonstrate consistency with these approved plans, the site
1967 location application must address the information identified in this policy. For ease of review,
1968 the engineering report shall include applicable portions of approved plans that have been
1969 referenced.

1970
1971 Based on the service area, the engineering report must clearly estimate the flow and loading
1972 projections to be conveyed to the proposed treatment works for the projected planning
1973 period. The flow and loading projections must include average daily flow, maximum month
1974 average daily flow, peak hour flow (or instantaneous flow value based on the service area),
1975 and the associated organic loads, and must be developed using the design service area
1976 population, land use, and unique customer information.

1977
1978 Population/Land Use Projections

1979 The engineering report shall develop flow and loading estimates through population and/or
1980 land use projections.

- 1981
- 1982 ● Population Projections: Population projections are appropriate for single use service
1983 areas and well-defined residential developments that do not have significant
1984 commercial/industrial waste loads. For single use service areas, such as schools,
1985 churches, campgrounds, etc., the population shall be expressed as the number of each
1986 population type at build out or certified occupancy. Population types for a single use
1987 treatment works may include day staff, over-night staff, visitors, etc. For well-defined
1988 residential developments/communities, the engineering report may rely on historical
1989 census data extrapolations or typical household sizes (e.g., single family equivalent
1990 (SFE) = 3.2 persons, multi-family equivalent (MFE) = 2.1 person, etc.) and household
1991 types (zoned R-1, R-2, MFE, etc.) to estimate service area populations. All information
1992 used to develop population estimates must be well documented in the engineering
1993 report.
 - 1994 ● Land Use Projections: Land use projections are appropriate for significant service
1995 areas with a variety of land uses. Typically, local planning documents use a
1996 combination of open space, floor area ratio, and zoning types to define development
1997 within a service area. The engineering report shall subdivide the service area into land
1998 use types, such as open space, commercial, residential (SFE, R2, MF, etc.), and

1999 translate this information into residential populations, industrial/commercial land use
2000 areas, or building square footages to determine appropriate loading estimates.

2001
2002 Note, general land use estimates may not be considered adequate for special circumstances
2003 (food processing facilities or computer chip manufacturing) in a small community. These
2004 industries may exceed typical average waste loading values used for planning. The
2005 engineering report must deal with these unique circumstances on a case-by-case basis.

2006
2007 Flow/Loading Projections

2008 Average Daily Flow: Following the development of population or land use projections, the
2009 engineering report shall develop an average daily flow for the service area over the defined
2010 planning period. When using historical data as the basis, the applicant shall use at least three
2011 (3) relevant years of matched population/land use and flow data. Potable water use data may
2012 be representative of wastewater flow with appropriate adjustments such as subtraction of
2013 outside irrigation water use. If historical data is not available, the engineering report shall
2014 use locally approved planning values for developing wastewater flows for each type of
2015 population/land use. If an approved comprehensive or master plan is not available, the
2016 engineering report shall justify planning values for wastewater flows for each type of
2017 population/land use. For single use service areas and OWTS, the engineering report shall
2018 develop the average daily flow using: 1) at least three (3) years of representative, matched
2019 daily population and flow data, if available, 2) planning values for flow provided in Regulation
2020 43 (or successor), or 3) other applicable and widely accepted planning or engineering
2021 reference manuals. The engineering report shall include documentation of all references.

2022
2023 Maximum Month Average Daily Flow (Design Capacity): After establishing the average daily
2024 flow, the engineering report shall develop the maximum month average daily flow. For single
2025 use facilities and OWTS, the maximum month average daily flow is at full occupancy, and for
2026 OWTS, the flow values must follow Regulation 43 (or successor) requirements unless justified
2027 otherwise. For sites with significant fluctuations in daily flow, maximum month average daily
2028 flow must consider days with reasonable flow and not minimalist days (e.g., school with 22
2029 days attendance divides monthly flow by 22 days, not 30 days). Some small-scale examples of
2030 maximum month average daily flow at full occupancy include:

- 2031
- 2032 ● A small motel with 24 rooms. Planning values in Regulation 43 would indicate flow of
2033 2,400 gpd (24 rooms, 2 per room, 50 gpcd). Evaluation of existing data with matched
2034 population might show average daily flow is 33 gpcd in January and 38 gpcd in August.
2035 Using the maximum month average daily flow (i.e., 38 gpcd in August) and pairing with
2036 full occupancy, the maximum month average daily flow at full occupancy would be
2037 1,824 gpd (48 people, 38 gpcd).
 - 2038 ● A rural school with 100 students and 20 staff. Planning values in Regulation 43 would
2039 indicate flow of 2,300 gpd (100 students at 20 gpcd with cafeteria but no gym or
2040 showers, 20 staff at 15 gpcd). Evaluation of existing data with matched population
2041 might show average daily flow is 14 gpcd in February and 16 gpcd in October including
2042 students and staff. Using the maximum month average daily flow (i.e., 16 gpcd in

2043 October) and pairing with full occupancy, the maximum month average daily flow at
2044 full occupancy would be 1,920 gpd (120 people, 16 gpcd).

2045
2046 For all other treatment works, the maximum month average daily flow must be tied to a
2047 special event, I&I, commercial and industrial contributions, a seasonal change in water use
2048 for a specific service area, or other justifiable and documented event. Due to the potential
2049 variability, this estimate shall be made using at least three (3) years of historic records. If
2050 historic records are unavailable, the engineering report shall document the basis for the
2051 proposed maximum month peaking factor. When the maximum flow stems from I&I estimates,
2052 the engineering report shall estimate I&I based on a percentage of the average daily flow.
2053 This seasonal flow should be added to the average daily flow as a non-peaked base flow to the
2054 proposed treatment works influent. Unsupported I&I estimates should be a minimum of 10
2055 percent of the average daily flow. The engineering report shall include documentation of all
2056 references.

2057
2058 Peak Hour Flow: The engineering report shall build from the average daily flow estimate to
2059 develop a peak hour design flow or other justified design peak, if deemed necessary based on
2060 the service area. For example, a treatment works providing service only to a sports stadium
2061 may need to accommodate the peak flow from all fixture units operating simultaneously. For
2062 OWTS with a design capacity of 2,000 gpd or less, the design must follow Regulation 43 (or
2063 successor) requirements unless justified otherwise. An OWTS design may include a design
2064 capacity (i.e., maximum month average daily flow at full occupancy) of 2,000 gpd or less
2065 while some system components (e.g., septic tank, soil treatment area) may be larger to
2066 adequately cover some days with above-average flow, thereby allowing permitting by the
2067 local public health agency provided that daily flow monitoring is being periodically reported
2068 to the local agency to confirm the design capacity is not exceeded. Flow equalization is part
2069 of a treatment works. If an OWTS design has flow equalization and design capacity (i.e.,
2070 maximum month average daily flow at full occupancy) of 2,000 gpd or less while some system
2071 components (e.g., septic tank, soil treatment area) are larger to adequately cover some days
2072 with above-average flow, the flow equalization can be used to smooth out peak day flows and
2073 still allow permitting by the local public health agency. However, flow equalization in a
2074 treatment works receiving flows greater than 2,000 gpd for a maximum month average daily
2075 flow at full occupancy will require site application and design review and approval. For all
2076 other treatment works, the engineering report shall develop either a single composite peaking
2077 factor for all types of population/land uses or individual peaking factors for each type of
2078 population/land use. The peaking factors should be developed from at least three (3) years of
2079 historical data. If historical data is not available, the design shall rely on locally approved
2080 peaking factors or industry accepted peaking factor formulas. The engineering report shall
2081 include documentation of all references.

2082
2083 Organic Loading: With the projected service area flows established, the engineering report
2084 shall estimate the organic loading to the proposed treatment works. The engineering report
2085 must consider historical organic loading, special users (commercial, industrial, etc.), typical
2086 domestic organic loads, and local planning requirements. The engineering report shall

2087 evaluate at least three (3) years of historical data. If not available, the engineering report
2088 shall justify the organic loading to the proposed treatment works through an analysis of
2089 individual user types and their anticipated organic loading. For single use facilities and OWTS,
2090 where historical data is unavailable, the engineering report shall rely on the planning values
2091 provided in Regulation 43 (or successor) or other applicable and widely accepted planning or
2092 engineering references. The engineering report shall include documentation of all references.
2093

2094 Staging or Phasing

2095 Based on initial flows and loads, sometimes the proposed treatment works cannot function
2096 effectively especially when designed for the long-range planning associated with the service
2097 area. In this case, the applicant shall develop an operational plan, and this plan shall be
2098 included as part of the site location application rather than during the design review phase.
2099 The operational plan must clearly identify measurable and definitive guidelines for
2100 constraining conditions. Please refer to section 22.13 in this policy for specific information.
2101

2102 22.6(1)(b)(ii) Evaluation of Site and Treatment Alternatives

2103 The engineering report shall identify the proposed site location, and the various site and
2104 treatment alternatives evaluated for the proposed treatment works.
2105

2106 Alternative Sites

2107 The engineering report shall identify multiple sites that were evaluated as part of the
2108 process, and compare each of those sites with respect to real estate availability and cost,
2109 disposal options, geologic conditions, site access, proximity to habitable structures, proximity
2110 to drinking water intakes, geographic benefits (gravity flow), water quality impacts, water
2111 rights issues, life-cycle economics, setback requirements, and other pertinent site selection
2112 criteria. All potential sites must be specifically evaluated with respect to the setback
2113 requirements of this policy. The site location evaluation shall also discuss how the various
2114 sites may impact selection of a specific type of treatment alternative.
2115

2116 Treatment Alternatives

2117 In addition to specific site characteristics, treatment options shall be discussed in detail with
2118 respect to meeting the required degree of treatment to satisfy the WQPTs, capital costs,
2119 projected O&M, ease of operation, operator flexibility, potential for expansion or
2120 modification, and applicability to each potential site.
2121

2122 22.6(1)(b)(iii) Water Quality Planning Targets

2123 The applicant must submit a *Domestic Water Quality Planning Target/PEL Application Form*
2124 to the Permits Section in order to determine the WQPTs needed for the proposed project.
2125 WQPTs can consist of existing permits, water quality assessments, a permit modification, a
2126 new permit, a PEL document, a limited-scope PEL, or a combination thereof. A copy of the
2127 determination from the Permits Section identifying the document to be used as the WQPTs
2128 shall be included with the engineering report. If the determination requires the applicant to
2129 perform a permit action or obtain PELs for the proposed project, then the applicant must
2130 apply for these documents prior to submitting a site location application for review. For

2131 additional information concerning the WQPT determination process and how to obtain PELs,
2132 the applicant shall refer to the following Permits Section's *Water Quality Planning Targets*
2133 *and Preliminary Effluent Limitations (PELs)* web page:
2134 https://cdphe.colorado.gov/WQ_Planning_Targets_and_PELs.

2135
2136 In the case where PELs are required for the proposed project, the PELs will provide discharge
2137 criteria specific to the stream segment, or groundwater, receiving the discharge at the
2138 proposed design hydraulic capacity. The applicant shall include a copy of the PELs with the
2139 site location application. If there are questions regarding the validity of older PELs, the
2140 application should refer to the November 2020 Division guidance document, [Establishment of](#)
2141 [Water Quality Planning Targets and PELs](#). When PELs are no longer valid, the applicant shall
2142 be required to obtain a new determination of WQPTs. Note, the request for new WQPTs by
2143 the applicant may inherently delay the site location application review by the Division.

2144
2145 When PELs are developed for the proposed project, the PEL document will establish
2146 limitations for three (3) sets of parameters.

- 2147
- 2148 1. The first set of parameters may contain the following: BOD, total suspended solids
2149 (TSS), E. coli, pH, nitrogen species (i.e., ammonia, nitrate, nitrite, total inorganic
2150 nitrogen (TIN), and total nitrogen (TN)), total residual chlorine (TRC), and total
2151 phosphorus (TP). The Division may also include other parameters in the first set of
2152 limitations, particularly where a current permit includes a limit for a given parameter.
2153 During the site location application process, the Division will evaluate the selected
2154 treatment alternative to ensure the technology can meet the limitations defined for
2155 the first set of parameters.
 - 2156 2. The second set of parameters may contain all of the metals, inorganic parameters,
2157 and whole effluent toxicity (WET) testing for which numeric standards have been
2158 adopted by the Commission for the receiving stream segment, or groundwater, and
2159 proximate downstream segments, except those included in the first set of parameters.
2160 During the site location application process, the Division may or may not evaluate the
2161 selected treatment alternative to ensure the technology can meet the limitations
2162 defined for the second set of parameters depending on how the applicant plans to
2163 address these limitations. The limitations contained in this second set may be able to
2164 be met by the development of a pretreatment program, the refinement of local limits
2165 under an existing pretreatment program, or other methods of source water control. In
2166 these instances, the ability of the treatment works to meet these limitations will not
2167 be reviewed under the site location application process and are the responsibility of
2168 the permittee. If treatment or other operational control methods are to be used
2169 specific to a parameter(s) in the second set, the ability of the treatment works to
2170 meet the limitation(s) will be reviewed under the site location application process.
 - 2171 3. The third set of parameters may contain a summary of potential *Regulation No. 31 -*
2172 *The Basic Standards And Methodologies For Surface Water* (Regulation 31) nutrient
2173 limitations that have been developed for the PEL. The water quality based effluent
2174 limits (WQBELs) expressed in the third set of parameters are based on standards that

2175 have not yet been adopted by the Commission, but become effective December 31,
2176 2027, as currently written. The values are provided for planning purposes in order to
2177 assist the applicant in long-term planning for nutrient removal. This may be especially
2178 beneficial for applicants using the state revolving fund (SRF) program or other federal
2179 funds to finance a proposed project, where the applicant is required to perform an
2180 alternatives analysis projecting current and future costs for specific treatment
2181 processes.

2182
2183 Where a Temporary Modification of a Standard for the Second Set Parameters or a Site-
2184 Specific Ambient-Based Standard Has Been Approved by the Commission

2185 Where a temporary modification is in place (at the time the Division begins working on the
2186 PELs) for a parameter which is based on significant uncertainty regarding the water quality
2187 standard necessary to protect current and/or future uses, or which is based on significant
2188 uncertainty regarding the extent to which existing quality is the result of natural or
2189 irreversible human-induced conditions, the Division will determine the appropriate PEL based
2190 on Section 31.9(4) of Regulation 31. Where another type of temporary modification is in place
2191 (i.e., one based on significant uncertainty regarding the timing of implementing attainable
2192 source controls or treatment), the PEL will be set based on the underlying standard.

2193
2194 Where a site-specific, ambient-based standard has been approved by the Commission and is in
2195 place at the time the Division begins working on the PELs, the PEL for that parameter will be
2196 based on the site-specific standard.

2197
2198 22.6(1)(b)(iv) Analysis of Existing Facilities within the Applicant's Service Area

2199 As part of the planning stage, the engineering report must document and discuss the loading,
2200 capacity, and performance of any relevant existing facilities within the applicant's proposed
2201 service area boundary. The Division interprets relevant existing facilities to be existing
2202 treatment works that are currently designed to receive greater than 2,000 gpd of domestic
2203 wastewater. While not all relevant existing facilities within the service area may intend to
2204 consolidate with the proposed treatment works during the design period, each should be
2205 given due consideration as part of the engineering report, because the facility may eventually
2206 need to consolidate due to environmental, economic, or political issues. The engineering
2207 report shall discuss the location, ownership, present flows, permitted capacity, type of
2208 treatment, condition of facilities, and discharge permit number for each existing relevant
2209 treatment works within the proposed service area.

2210
2211 Examples of existing relevant treatment works include the following:

- 2212
- 2213 ● Existing treatment works to be replaced by the proposed treatment works on a new
2214 site;
 - 2215 ● Consolidation of multiple existing treatment works with a single treatment works
2216 servicing the entire service area;
 - 2217 ● Existing OWTs within the proposed service area; and
 - 2218 ● Replacement of failing decentralized OWTs with a centralized treatment works.

2219

2220 **22.6(1)(b)(v) Consolidation Analysis**

2221 The engineering report shall include an analysis of opportunities for consolidation of
2222 treatment works in accordance with the provisions of Section 22.3(1)(c), which identifies that
2223 the Division shall encourage the consolidation of treatment works whenever feasible. The
2224 applicant shall refer to Section 22.3(1)(c) of this policy for the specific factors to be
2225 considered in the consolidation analysis and discussed as part of the engineering report.
2226 These factors may either be used as a means to support consolidation or consider
2227 consolidation infeasible. The consolidation analysis shall also take into account any
2228 recommendations established in the local long-range comprehensive plan or 208 plan, as well
2229 as the input provided by the appropriate review agencies, and shall not be used as a means to
2230 diminish the consideration given to these plans.

2231

2232 **22.6(1)(b)(vi) Natural Hazards Analysis**

2233 In order for the Division to consider that the proposed site and operation of proposed
2234 treatment works will not be adversely affected by floodplains or other natural hazards, the
2235 engineering report shall include evidence identifying any such hazards. This requirement is
2236 also addressed in Section 22.5(1)(e) of Regulation 22, and requires the Division to consider
2237 the location of a proposed project relative to floodplains or other natural hazards and ensure
2238 that the proposed treatment works be so located that it is not unnecessarily endangered by
2239 these hazards when making a determination as to whether or not to issue an approval of the
2240 site location application. In accordance with Section 22.5(1)(e) of Regulation 22 and the
2241 respective section of this policy, the engineering report shall establish the presence of any
2242 natural hazards, identify whether the proposed treatment works is unnecessarily endangered
2243 by the hazards, and describe any means necessary for mitigating the hazards.

2244

2245 **22.6(1)(b)(vii) Geotechnical Conditions**

2246 Regulation 22 indicates that the engineering report must include the information used to
2247 evaluate geotechnical conditions at the proposed and alternative sites. Since geotechnical
2248 conditions of each alternative site may impact the selection of the site location, the
2249 engineering report shall only be required to discuss the general geotechnical conditions at
2250 each alternative site due to the potential cost implications, but shall be required to provide a
2251 site-specific geotechnical investigation for the proposed site location.

2252

2253 For the proposed site location, the applicant has two ways to address the site location
2254 application requirements within the engineering report, which include either providing
2255 preliminary geotechnical information or a formal geotechnical report.

2256

2257 **Preliminary Geotechnical Information**

2258 First, the engineering report can include preliminary geotechnical information for the
2259 selected site comprised of reference materials available from the Natural Resource
2260 Conservation Service (i.e., Soil Surveys), Colorado Geological Survey, on-site or nearby
2261 geotechnical investigations, or other geotechnical data deemed representative of the site.
2262 The preliminary geotechnical information for all proposed groundwater discharges must

2263 provide an indication of anticipated percolation rates or include soil profile test pit
2264 information from similar conditions completed in accordance with Regulation 43 (or
2265 successor) or overriding local requirements. In using the preliminary geotechnical
2266 information, Regulation 22 identifies that the information provided must be sufficient for
2267 “that person” to make a determination that the site can reasonably be expected to support
2268 the proposed treatment works. The Division interprets “that person” to be a professional
2269 geologist or a Colorado licensed professional engineer with an appropriate level of experience
2270 investigating geologic site conditions. The Division expects “that person” to either review or
2271 create the data provided within the engineering report, and provide a statement indicating
2272 that the selected site can reasonably be expected to support the proposed treatment works.
2273 The engineering report shall continue to build on the materials provided with the preliminary
2274 geotechnical information by discussing the impact of the findings at each alternative site on
2275 the design, construction, operation, and maintenance of the proposed treatment works.
2276

2277 Note that Section 22.6(1)(b)(vii) of Regulation 22 states that the Division may require that
2278 geotechnical evidence be presented in the form of a report. The Division interprets this to
2279 mean that the applicant must submit a geotechnical report for all proposed treatment works
2280 during the site location application or design review process, unless waived by the Division in
2281 writing.

2282

2283 Formal Geotechnical Report

2284 Thus, the applicant may submit a formal geotechnical report instead of preliminary
2285 geotechnical information for the selected site location of the treatment works at the time of
2286 site location application. At a minimum, this geotechnical report shall include site-specific
2287 soil boring information that discusses seasonal and measured groundwater conditions, soil
2288 bearing capacity, excavation benching, shoring, and sloping, bedding and backfill, compaction
2289 and moisture conditioning, alternative foundation design, an analysis of geotechnical hazards,
2290 and design recommendations based on the findings. The geotechnical report for all proposed
2291 groundwater discharges must provide percolation test data at the proposed discharge
2292 elevation or must present soil profile test pit information completed in accordance with
2293 Regulation 43 (or successor). Per Regulation 22, the Division may require a geotechnical
2294 report stating that the site will support the proposed treatment works. When the minimum
2295 requirements of the geotechnical report are met, the Division considers the associated design
2296 recommendations contained within the report to indicate that the site will support the
2297 proposed treatment works. At this point, the submittal of the formal geotechnical report
2298 would fulfill the geotechnical submittal requirements for both the site location and design
2299 application submittal, and resubmittal of the geotechnical report during the design review
2300 process is not required.

2301

2302 Conditional Site Location Approval based on Preliminary Geotechnical Information

2303 If the engineering report only includes preliminary geotechnical information as a means to
2304 determine that the site can reasonably be expected to support the proposed treatment
2305 works, then the site location approval will be issued conditionally upon the applicant
2306 providing a formal geotechnical report as part of the design review submittal. Additionally, if

2307 the applicant receives a conditional site location approval based on only preliminary
2308 geotechnical information but the formal geotechnical report submitted during the design
2309 review phase indicates that the site will not support the proposed treatment works, the
2310 applicant shall provide a statement as such in writing to the Division. The Division may modify
2311 the original site location approval, which may require the applicant to reapply for a site
2312 location approval at an alternate site under Section 22.6 of Regulation 22.

2313

2314 **22.6(1)(b)(viii) Selected Alternative Discussion**

2315 Regulation 22 indicates that the engineering report must include a detailed description of the
2316 selected alternatives for the proposed treatment works including a legal description of the
2317 proposed site, treatment system description, design capacities, and operational staffing
2318 needs.

2319

2320 **Legal Description of Proposed Site Location**

2321 The engineering report shall include a legal description of the proposed site location.
2322 Acceptable legal descriptions include plat maps, title surveys, and surveyed property
2323 boundary drawings. All legal descriptions shall be signed and sealed by a professional land
2324 surveyor in accordance with the requirements of the DORA.

2325

2326 **Treatment System Description and Design Capacities of Selected Alternative**

2327 The engineering report must describe the specific treatment processes and capacities
2328 proposed for both the liquid and solid streams at the proposed treatment works. The report
2329 shall address how the proposed treatment process will meet the WQPTs, unless specifically
2330 omitted through pretreatment, specific source controls, or other means discussed in Section
2331 22.6(1)(b)(iii) of Regulation 22. The descriptions of each treatment process and capacity shall
2332 be thorough and discussed in order of flow through the proposed treatment works. This
2333 preliminary information must adequately demonstrate that the selected treatment processes
2334 are capable of complying with the requirements of the design criteria and have the ability to
2335 achieve continuous compliance with the WQPTs. Examples of such descriptions are as follows:

2336

2337 ● Two (2) non-clog submersible pumps (1 duty, 1 standby) installed within a below-grade
2338 wet well will convey influent wastewater flows to the headworks. Each pump will be
2339 capable of conveying the peak hour flow, and be equipped with a motor controlled by
2340 a variable frequency drive. Level indication will be provided by a submersible pressure
2341 transducer, and the wastewater flow conveyed by the influent pump station will be
2342 measured using a magnetic flow meter;

2343 ● Two (2) mechanically cleaned, step type fine screens with a screen opening size of 1/4
2344 inch will be installed in the headworks. Each fine screen will be hydraulically rated to
2345 treat the peak hour flow, and equipped with a washing and compacting unit, which
2346 washes, compacts, and discharges the screenings to a waste receptacle; and

2347 ● An in-channel type ultraviolet disinfection system will be utilized to disinfection
2348 effluent flows. The system will consist of two (2) channels with each channel
2349 containing three (3) modules installed in series. The low pressure, high intensity lamps
2350 will be arranged vertically in the channel and perpendicular to the direction of the

2351 flow. Each channel of the UV disinfection system shall be designed to disinfect a peak
2352 hour flow by providing a minimum dose of 30 millijoules per square centimeter to
2353 wastewater effluent with a UV transmittance no greater than 65 percent. The water
2354 level through each UV channel shall be maintained by a fixed serpentine weir.

2355

2356 To aid with the review, the engineering report shall contain a preliminary process flow
2357 diagram (PFD) for both the liquid and solids processing streams.

2358

2359 Operational Staffing Needs for Selected Alternative

2360 The engineering report must identify the operational staffing needs for the proposed
2361 treatment works. The engineering report shall indicate operator needs by identifying the
2362 number and certification level for all treatment staff, and justify the proposed staffing level
2363 based on the size, complexity, automation, financial burden, maintenance requirements, and
2364 management hierarchy developed for the proposed treatment works. The applicant shall
2365 further provide a well documented plan for providing properly certified and trained personnel
2366 to operate the proposed treatment works.

2367

2368 22.6(1)(b)(ix) Legal Arrangements Showing Control of the Site

2369 The applicant shall provide sufficient information in the engineering report to demonstrate
2370 that all proposed components of the treatment works exist within the legal boundaries of the
2371 proposed site. The applicant has a number of options to demonstrate control of the site for
2372 the life of the project depending on the control mechanism.

2373

2374 Control of the Site through Ownership

2375 The applicant may demonstrate control of the site through ownership by providing a copy of
2376 the deed or title to the property in the name of the applicant. The Division will accept a copy
2377 of the title insurance, but the applicant must ensure that the title insurance document does
2378 not contain errors regarding ownership, property description, or limitations or restrictions
2379 that would preclude using the property for its intended purpose prior to submitting the
2380 information to the Division. The site location application must disclose and address any
2381 limitations that potentially impact the applicant's ability to maintain, operate, or construct
2382 facilities within the proposed site location for the life of the project.

2383

2384 Control of the Site through Use of Public Right of Ways

2385 In cases where the site location for the proposed treatment works utilizes public right of ways
2386 (ROWS) (e.g., municipal transportation or utility ROWs), the applicant is not required to
2387 demonstrate legal control of the site. However, the engineering report shall provide a map
2388 identifying the boundaries of the site location for the proposed treatment works in
2389 relationship to the public ROWs.

2390

2391 Control of the Site through Use of Right of Ways Across Private Property

2392 Alternatively, the applicant may demonstrate legal control of the site through use of a ROW
2393 across private property. Specific expectations with regard to information for these types of

2394 ROWs (e.g., easements via purchase, lease or condemnation, etc.) and the site location
2395 application are as follows:

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1. To facilitate as timely a review process as possible, all ROWs that are necessary for the project shall be obtained prior to submittal of the site location application, and copies of the documentation for all ROWs shall be included in the submittal.
2. Where all ROWs could not be obtained by the time of site location application, at a minimum, the applicant must identify all ROWs that will be needed for the project, and an explanation of how they intend to obtain each of the ROWs.
 - a. For ROWs that do not involve condemnation, signed copies of agreements concerning the intent to sell/lease between the applicant and land owners (for which easements are needed) may be submitted to fulfill the legal control requirement during the site location phase of the project. The copies of agreements must clearly indicate the terms and conditions of the lease or legal easement specific to the duration of the agreement in addition to access, construction, and maintenance of any treatment works located within the proposed site location for the duration of the agreement.
3. If prior to submittal and by the time that the site location application is submitted:
 - a. The applicant, which does not require ROWs for the project that involve condemnation, cannot obtain a signed agreement between the applicant and each landowner regarding the intent to sell/lease the land; or
 - b. The applicant, which requires ROWs for the project that involve condemnation, cannot demonstrate legal control of the site, because the condemnation process has not been completed.

In such a situation where the applicant cannot demonstrate legal control of the site prior to site location approval (e.g., the situations described in items 2 and 3 above), the Division may issue a conditional site location approval that requires the applicant to obtain the ROWs and submit the associated documentation to the Division prior to the Division issuing design approval. In such a case, the Division will not issue design approval until all documentation (that demonstrates that the applicant currently has full legal control of the site) has been received and reviewed by the Division.

In the event that there is reason to anticipate that a specific ROW may not be obtained within a period of six (6) months or less (i.e., a ROW involves complex contractual or other issues or the condemnation process cannot be completed due to legal issues, etc.), the Division will not be able to issue a conditional site location approval, and the site location application may need to be returned to the applicant. The application would then need to be re-submitted to the Division once all ROWs have been obtained and are in place, and a new site location application fee will be required for the re-submittal.

2438 For phased projects, the conditional site location approval would require that the ROWs
2439 (pertinent for the entire project) be obtained, and that the associated documentation be
2440 submitted to the Division prior to the Division issuing design approval for the first phase of the
2441 project. In such a case, the Division will not issue design approval until all documentation
2442 (that demonstrates that the applicant currently has full legal control of the site) for each
2443 phase has been received and reviewed by the Division.

2444

2445 **22.6(1)(b)(x) Institutional Arrangements**

2446 The Division interprets Section 22.6(1)(b)(x) of Regulation 22 to apply to the treatment
2447 entity's overall ability to generate funds, set rates, and earmark funds for acceptable waste
2448 treatment through institutional arrangements such as contracts and covenants, conditions,
2449 and restrictions (CCRs). While this specific subsection refers directly to acceptable waste
2450 treatment, the Division interprets this to also include the construction, operation, and
2451 maintenance of all appurtenances to treatment works. The engineering report shall include
2452 copies of institutional arrangements that demonstrate the applicant's ability to pay for
2453 acceptable waste treatment. The institutional arrangements must clearly indicate how the
2454 applicant has the authority to control rates and set aside funds for capital, operational, and
2455 maintenance improvements/programs over the life of the project.

2456

2457 Under special conditions, multiple treatment entities may own and operate a single
2458 treatment works. While additional information must be submitted for this condition under
2459 Section 22.6(1)(d) of Regulation 22, the engineering report must discuss how the institutional
2460 agreements stipulate funding to provide adequate treatment and demonstrate institutional
2461 arrangements with individual users or other service areas through a legally enforceable
2462 mechanism.

2463

2464 **22.6(1)(b)(xi) Management Capabilities**

2465 Management capabilities refer to the treatment entity's ability to control the waste
2466 constituent and hydraulic loading to the proposed treatment works.

2467

2468 **Controlling Hydraulic Loading**

2469 Treatment entities need to have the capability to control influent hydraulic loading through a
2470 legally enforceable means. This management may be in the form of user contracts,
2471 ordinances, operating agreements, management capabilities to expand the facilities, etc. The
2472 engineering report must discuss the potential dischargers that may produce large volumes,
2473 high peak, or slug discharges that may impact the treatment works. The engineering report
2474 must further address the means to control hydraulic loading to the proposed treatment works
2475 or the alternate management strategy, and include copies of final user contracts, ordinances,
2476 operating agreements, etc. when required to limit the influent hydraulic flow to the
2477 treatment works.

2478

2479 **Controlling Waste Constituent Loading**

2480 Similarly, the engineering report must discuss the applicant's capability to control influent
2481 waste constituent loading through a legally enforceable means. This management may also be

2482 in the form of user contracts, ordinances, operating agreements, management capabilities to
2483 expand the facilities, etc. As stated in Section 22.6(1)(b)(iii) of Regulation 22, the applicant
2484 may indicate in the engineering report that effluent limits for metals, organic parameters,
2485 and/or inorganic parameters, other than for total residual chlorine, will be met through
2486 implementation of a pretreatment program or other legally enforceable means of limiting
2487 discharges of these parameters to the wastewater collection system. The applicant may also
2488 provide documentation in the form of effluent data or an analysis predicting effluent quality
2489 to demonstrate that the WQPTs will be met without specific source controls.

2490

2491 In addition to these specific instances, the applicant may expect to use management
2492 capabilities to control influent wastewater loadings not as a way to eliminate treatment for a
2493 specific parameter, but rather as a method to limit the capacity or size of a treatment works.
2494 For all cases where management capabilities are essential to meeting the required WQPTs
2495 and/or specific federal requirements for pretreatment, the engineering report shall include
2496 information demonstrating the management capabilities of the treatment entity responsible
2497 for the treatment works and/or appurtenance(s) thereto.

2498

2499 *Identification of Industrial Users and Pretreatment Requirements*

2500 The engineering report shall discuss the known and potential significant industrial users,
2501 target pollutants and possible sources, and proposed management systems used to control
2502 influent waste to the proposed treatment works. In addition, the engineering report must
2503 include boilerplate contracts, agreements, pretreatment requirements, contracts, covenants,
2504 use ordinances, etc. for significant industrial users and other target waste generators that
2505 demonstrate specific control mechanisms and management capabilities of the treatment
2506 entity overseeing the treatment works. Although formal, EPA-approved Pretreatment
2507 Programs (per 40 CFR 403) are not required for all treatment works, the National
2508 Pretreatment Program has a great deal of technical and regulatory reference information that
2509 may be helpful for developing and implementing pollutant source control programs, and some
2510 of this information may be found in the following resources.

2511

- 2512 1. For an example of ordinance language that can be used to ensure that the proposed
2513 source control(s) are legally enforceable, please refer to the following web page:
2514 https://www3.epa.gov/npdes/pubs/pretreatment_model_suo.pdf.
- 2515 2. For other information regarding control of pollutants into treatment works, please
2516 refer to the following web page: <https://www3.epa.gov/npdes/pubs/owm021.pdf>.
- 2517 3. For specific questions regarding implementation of formal, approved Pretreatment
2518 Programs, please refer to the Colorado and EPA Region VIII contact information that is
2519 found at the following web page: <https://www.epa.gov/npdes/contact-us-national-pretreatment-program>.

2520

2521

2522 *22.6(1)(b)(xii) Financial System*

2523 The financial system associated with construction, operating, and maintaining the proposed
2524 treatment works must include evidence of sufficient financial resources to construct the

2525 facility, as well as a financial plan to generate revenue sufficient to repay any indebtedness
2526 and cover ongoing operational expenses.

2527

2528 Funding for Privately Owned Treatment Works and Developers

2529 If the applicant intends to finance the project independently, evidence of such financial
2530 capability in the form of written communication from a financial institution attesting to the
2531 applicant's possession of adequate capital to undertake the proposed project must be
2532 included with the engineering report. In the event that the applicant requires a loan to
2533 complete the project, the engineering report must include a letter from a financial
2534 institution, bond advisor, or other loan program indicating its intent to make such a loan for
2535 the purpose of constructing the proposed treatment works.

2536

2537 Funding for Municipal Treatment Works

2538 For municipal or publicly financed treatment works, the applicant must address capital
2539 construction capabilities by demonstrating available cash resources through including copies
2540 of current budget documents with the engineering report. If the applicant intends to finance
2541 the project using loan and grant funds, the engineering report must include documentation
2542 from any provider agreeing to issue loans and/or grants for the proposed project including the
2543 state revolving fund (SRF) program. If the applicant intends to fund the project using bonds,
2544 the engineering report must include a copy of the report from a bond advisor or intended
2545 bond underwriter.

2546

2547 Applicants using Borrowed Funds to Finance the Treatment Works

2548 All applicants relying on borrowed funds must develop and present a financial plan for
2549 repaying the borrowed funds, along with any fees and interest associated with the
2550 transaction. The plan must address the full term of the payback period and not just
2551 demonstrate a pattern of anticipated revenue generation. If applicable, the financial plan
2552 must also identify a fee structure for the retirement of capital costs associated with the
2553 proposed project, as well as any process expansions or equipment/structure replacements
2554 funds required within the planning period. The fee structure must include system
2555 development fees and monthly user fees. Public municipalities may satisfy these
2556 requirements by providing the current fee structure, rate studies, and fee ordinance that
2557 demonstrates procedures for rate and fee adjustments and relevant budget documents.

2558

2559 Ultimately, the engineering report must include a financial system that outlines how the
2560 applicant can provide the necessary funds for construction, operation, maintenance, and
2561 capital projects for the life of the project. The financial system must provide sufficient
2562 information to show that the treatment entity that oversees the proposed treatment works
2563 has adequate financial capacity over a 20-year period or some other clearly defined future
2564 planning period. In addition to the long-range financial plan, the Division expects the
2565 engineering report to include a projected 5-year budget, including annual costs and revenues,
2566 rate and fee structures, reserve funds (i.e., emergency replacements), and operating
2567 expenses. At a minimum, the financial system must include a discussion of the following
2568 items:

- 2569
- 2570 1. Itemization of projected expenses and revenues including such costs as equipment
- 2571 O&M and required sampling;
- 2572 2. Comparison of all anticipated wastewater revenues and planned expenditures for a 20-
- 2573 year period or some other clearly defined future planning period;
- 2574 3. Identification of reserve accounts for emergencies/replacement funding and O&M
- 2575 funds;
- 2576 4. Access to public and private financial capital;
- 2577 5. Revenues must be greater than costs including an operating ratio greater than 1.0
- 2578 (operating revenue/operating expense) and coverage ratio greater than 1.0 (total
- 2579 revenue-operating expense/debt service);
- 2580 6. Current outstanding debt and ability to borrow funds;
- 2581 7. Periodic financial audits;
- 2582 8. Annual development and utilization of budget;
- 2583 9. Rate structure based on customer, flow, and/or waste type; and
- 2584 10. Capital improvements plan.
- 2585

2586 **22.6(1)(b)(xiii) Implementation Schedule**

2587 The engineering report must include an implementation schedule for the proposed treatment

2588 works. The schedule shall be presented in the form of a timeline or Gantt chart with a

2589 written narrative discussing critical milestones to meet the proposed start-up date (month

2590 and year). At a minimum, the schedule shall include the estimated time to construct the

2591 proposed treatment works from the commencement of construction to start-up, any staging

2592 or phasing discussed as part of Section 22.6(1)(b)(i) of Regulation 22, and the projected start-

2593 up date. Additional information, such as projected site location approval, design review

2594 submittal, design approval, and bid award dates can assist the Division in visualizing the

2595 applicant's overall schedule.

2596

2597 **22.6(1)(b)(xiv) Operations and Maintenance**

2598 While Regulation 22 indicates that the applicant shall demonstrate the Owner's capability to

2599 operate and maintain the treatment works, the Division finds that Section 22.6(1)(b)(xiv) is

2600 meant to focus on emergency operations. The applicant shall address O&M requirements and

2601 manuals during the design review process, and not more than required by this section of the

2602 policy. The engineering report must include an emergency operations plan, and the plan shall

2603 be an overview of the proposed emergency management tools, facilities, programs, and

2604 equipment. While the design criteria addresses specific requirements for treatment works

2605 that must be incorporated into the design, the engineering report is meant to be a model for

2606 applying the required emergency systems to prevent potential sanitary sewer overflows of

2607 partially treated or raw wastewater or spills from unpermitted point sources. At a minimum,

2608 the engineering report must include an emergency operations plan that discusses the

2609 following issues:

2610

- 2611 ● The requirements of design criteria for the proposed treatment works;
- 2612 ● Special practices and local requirements for sensitive site locations;

- 2613 ● Telemetry and alarms;
- 2614 ● Standby power source identification;
- 2615 ● Equipment powered by the standby power source;
- 2616 ● Portable emergency pumping equipment;
- 2617 ● Emergency overflow storage sizing; and
- 2618 ● An operator call-down list and emergency response time justification.

2619

2620 The discussion shall justify the ability of the proposed treatment works to mitigate the
2621 potential hazards of a sanitary sewer overflow through appropriate management, equipment,
2622 and operational programs.

2623

2624 Please note that site location approval that includes an emergency operations plan, does not
2625 constitute approval of the plan during the design review process. The Division shall evaluate
2626 the plan during the design approval phase with respect to any new information provided and
2627 the requirements of the design criteria. If the proposed plan presented with the site location
2628 application varies from the requirements of the design criteria, then the design review
2629 submittal (i.e., PDR or BDR) shall include an updated emergency operations plan to meet the
2630 design criteria requirements. If the proposed emergency operations plan can be shown to be
2631 equivalent benefit to the design criteria requirements, the design review submittal may
2632 include a site-specific deviation request in accordance with Section 1.7.0 of the design
2633 criteria.

2634

2635 **22.6(1)(c) Notice of Intent to Construct**

2636 The applicant shall submit evidence to the Division as part of the site location application
2637 indicating that the applicant individually notified any person that owns private property
2638 directly impacted by the discharge of treated effluent from the proposed treatment works.
2639 The impact may be through the use of a ditch or other manmade conveyance structure (e.g.,
2640 stormwater infrastructure) utilized to convey the effluent to the point of discharge or the
2641 need to install treatment works infrastructure across private property to effectuate the
2642 discharge. The evidence provided to address this section of Regulation 22 shall be
2643 coordinated with the requirements of Section 22.6(1)(b)(ix), because the applicant is required
2644 to provide the necessary legal information (e.g., easements, ROW agreements,
2645 intergovernmental agreements) allowing the discharge of the effluent to privately owned
2646 infrastructure or access to the privately owned property for installation and maintenance of
2647 the proposed treatment works infrastructure. This legal information must demonstrate use or
2648 control of the private property for the life of the project.

2649

2650 All private property owners impacted by the discharge from the proposed treatment works
2651 shall be notified in writing to the maximum extent practicable. The site location application
2652 shall include a copy of all information sent to each private property owner impacted. This
2653 evidence shall include the following information:

2654

- 2655 ● Discussion of how the evidence ties to the information provided with the engineering
2656 report in accordance with Section 22.6(1)(b)(ix) of Regulation 22;

- 2657 ● Assessor's or plat map showing property boundaries of the proposed site location, the
2658 impacted private property, and property owner's names and addresses;
- 2659 ● Graphical representation of the exact portions of private property impacted by the
2660 proposed treatment works discharge;
- 2661 ● A narrative describing the proposed treatment works, construction and
2662 implementation schedule, effluent quantity and limits, and achieved setback
2663 requirements and/or proposed mitigation thereof;
- 2664 ● Certified mail receipts associated with the delivery of evidence package to each
2665 impacted private property owner;
- 2666 ● A discussion of any potential fees associated with the impacts; and
- 2667 ● Information regarding the inability to properly contact any impacted private property
2668 owner.

2669
2670 The evidence of notification shall include any correspondence received from the private land
2671 or property owners. These responses may be in the form of comments and acceptance or
2672 objection to the proposal. All notices shall be provided to the impacted private property
2673 owners at least 30 days prior to submittal of the site location application to the Division in
2674 order to allow sufficient time for response.

2675
2676 **22.6(1)(d) Capacity Sharing Agreements**
2677 When the proposed treatment works serves two (2) or more separate and distinct service
2678 areas under the control of different entities (i.e., individual, corporation, municipality, etc.),
2679 the entities must enter into a capacity sharing agreement. This capacity sharing agreement
2680 must be provided as part of the site location application submitted to the Division for review.
2681 The agreement must outline the legal relationship established between the two (2) or more
2682 entities for control, funding, operation, management, capacities, and expansion of the
2683 proposed treatment works.

2684
2685 The capacity sharing agreement must be finalized prior to receiving design approval through
2686 the Division. At a minimum, the site location application must include a draft agreement
2687 between the multiple entities to reflect the comments, needs, and desires of every entity.
2688 The site location application must discuss the current state of the document, critical disputed
2689 issues in the draft agreement, and any particular entity requests not currently represented in
2690 the draft agreement that must be resolved. Additionally, proof that all entities have
2691 participated in the development of the agreement must be documented and provided as part
2692 of the site application.

2693
2694 Any specific item(s) identified in the associated engineering report, as defined by Sections
2695 22.6(1)(b)(i) through 22.6(1)(b)(xiv) of Regulation 22, that directly impacts the capacity
2696 sharing agreement must be discussed within this part of the site location application. An
2697 example of a specific section that might need to be addressed by the agreement is Section
2698 22.6(1)(b)(xi) of Regulation 22. Under this requirement, each entity with their associated
2699 service area must address the needs of controlling the overall wastewater loading individually
2700 and as part of a combined effort to meet the WQPTs. The agreement must specifically

2701 address the following issues for each entity party to the agreement: control, funding,
2702 operation, management, specific capacities and loadings, and expansion of the proposed
2703 treatment works.

2704

2705 **22.6(1)(e) Consistency with Regional Water Quality Management Plan**

2706 The site location application for a new treatment works is associated with a specific service
2707 area as required to be defined in the engineering report in accordance with Section
2708 22.6(1)(b)(i) of Regulation 22. As part of the site location application, the applicant must
2709 demonstrate that the proposed service area conforms with the approved 208 plan and/or the
2710 local long-range comprehensive plan. In some cases, the applicant may need to request a
2711 revision of the 208 plan and/or the local long-range comprehensive plan prior to submitting a
2712 site location application to the Division.

2713

2714 The applicant must demonstrate that the proposed service area and population projections
2715 are consistent with an approved 208 plan for the planning region and/or the local long-range
2716 comprehensive plan. To demonstrate consistency with these approved plans, the site location
2717 application must address the information identified in Sections 22.3(1)(a), 22.5(1)(j), and
2718 22.5(1)(k) of this policy and in accordance with the respective sections of Regulation 22.

2719

2720 For ease of review, the site location application engineering report must include applicable
2721 portions of approved plans that have been referenced.

2722

2723 **22.6(2) Submittal of Application for Agency Reviews**

2724 Regulation 22 requires the applicant to provide copies of the site location application and
2725 engineering report to the review agencies prior to submission to the Division. The agencies
2726 will evaluate the site location application based on each agency's plans, policies, rules and
2727 regulations, which may include the 208 plan for the area, should such a plan exist. The
2728 applicant must perform all necessary coordination and supply all information to the agencies.
2729 The applicant is responsible for obtaining all necessary signatures on the site location
2730 application before submitting it to the Division. These agencies may include the county, city
2731 or town, local health authority, designated planning and/or management agency, and any
2732 other state or federal agency (for a list of county health agencies and 208 planning and
2733 management agencies refer to Appendix B). These agencies shall review and recommend
2734 approval or denial of the site location application to the Division.

2735

2736 Each review agency may recommend approval by simply signing and dating the site location
2737 application on the provided signature line. The agencies are welcome to provide a letter of
2738 approval to accompany the site location application, and are encouraged to include a letter
2739 citing specific concerns or if their approval hinges on specific conditions. For the agencies
2740 who are recommending denial of the site location application, in addition to signing the site
2741 location application and indicating that a denial is recommended, the agency must also
2742 provide a written statement explaining the reason(s) for recommending denial of the site
2743 location application.

2744

2745 The applicant shall provide each review agency at least 60 days to review the site location
2746 application and engineering report. The applicant may submit the site application to the
2747 Division prior to 60 days if all agencies provided comments, or after the 60 day period should
2748 any agency not provide a signature or comment letter. The Division shall contact non-
2749 responsive agencies, and provide seven (7) additional days to any agency that does not
2750 provide a signature or comment letter. Following the seven (7) days of additional time, the
2751 Division will proceed with its review of the site location application.

2752
2753 Any modification made to the site location application to address comments from any review
2754 agency shall be transmitted to each review agency. Any and all changes that are made to
2755 address comments shall be documented in the final submittal to the Division. The site
2756 location application shall further include any correspondence between the applicant and each
2757 agency.

2758
2759 Additionally, if the applicant finds that change impacting the design capacity is required
2760 following the issuance of the site location approval, the applicant must notify the review
2761 agencies in accordance with Section 22.4(14) of Regulation 22.

2762
2763 **22.6(3) Public Notification**

2764 This section of Regulation 22 requires the applicant to post a sign at the proposed site
2765 location to encourage public notification. The sign must include specific information
2766 documented in the regulation and must be formatted as specified, unless local county or
2767 municipal sign codes overrule. The sign must be posted for a minimum of 15 days prior to the
2768 time the site location application is submitted to the Division. However, the Division should
2769 be notified of the project at the time of the posting so that necessary public information can
2770 be made available. A photograph of the sign or other documentation certifying that this
2771 posting requirement has been met must be included with the site location application.

2772
2773 The sign shall be posted at the proposed site location in a location expected to receive the
2774 largest visitation by local persons. This location may be along a roadway or at the outfall
2775 location if located along a heavily used pedestrian trail. The site location application must
2776 indicate the posting location and justify the placement. The included photograph of the sign
2777 shall provide sufficient landmark cues to field verify the location. The site location
2778 application must also indicate the initial day that the sign was posted onsite.

2779 **22.7 APPLICATION PROCEDURES FOR INCREASING OR DECREASING THE DESIGN CAPACITY**
2780 **OF AN EXISTING DOMESTIC WASTEWATER TREATMENT PLANT WHERE**
2781 **CONSTRUCTION HAS TAKEN PLACE OR WILL TAKE PLACE**

2782

2783 A site location application for **Increasing or Decreasing the Design Capacity of an Existing**
2784 **Domestic Wastewater Treatment Plant Where Construction Has Taken Place or Will Take**
2785 **Place** is used for the following situations:

2786

2787 ● Construction that increases or decreases the design capacity of an existing treatment
2788 plant that has received prior site location approval from the Division; or construction
2789 that increases or decreases the design capacity of an existing treatment plant that was
2790 constructed prior to November 1967 with adequate documentation/evidence of the
2791 construction date and there have been no modifications (that require site location and
2792 design approval) made to the treatment plant since the date of construction.

2793 ● Where an in-kind replacement has been made in accordance with Section 22.12 of
2794 Regulation 22 and where the applicant is requesting utilization and Division
2795 acknowledgement of modified capacity (increase or decrease) of an existing treatment
2796 plant. This is applicable only for treatment plants that have received prior site
2797 location approval from the Division; or treatment plants that were constructed prior to
2798 November 1967 with adequate documentation/evidence of the construction date and
2799 there have been no modifications (that require site location and design approval)
2800 made to the facility since the date of construction.

2801 ● Decreasing the design capacity of an existing treatment plant to 2,000 gpd or less,
2802 regardless of whether construction will take place or if the existing treatment plant
2803 has received prior site location approval. Note, consistent with the information
2804 provided in Section 22.13 of this policy, a separate design application and decision is
2805 not required for projects derating the design capacity to 2,000 gpd or less.

2806

2807 Note, this application type is not used for capacity changes of interceptors or lift stations;
2808 these are addressed separately in either Section 22.8, 22.9, or 22.10.

2809

2810 The Division shall review site location applications submitted for all capacity increases or
2811 decreases to treatment plants in accordance with all applicable sections of Regulation 22.

2812

2813 **22.7(1) Submittal Requirements/Expectations**

2814 The applicant shall prepare and submit the following forms and information to the Division:

2815

- 2816 ● [Fee Information Request Form](#);
- 2817 ● Domestic Water Quality Planning Target/PEL Application Form;
- 2818 ● [Section 22.7 - Decreasing the Design Capacity to 2,000 gpd or less](#);
- 2819 ● [Section 22.7 - Increasing or Decreasing the Design Capacity of an Existing Domestic](#)
2820 [Wastewater Treatment Plant](#); and
- 2821 ● Engineering Report.

2822

2823 The site location application, including the necessary forms, shall be submitted electronically
2824 to the Division using the following email address: CDPHE.WQEngReview@state.co.us. The
2825 Division prefers one (1) complete electronic application, and may request a paper copy for all
2826 or part of the application, as required, to facilitate the review process. The applicant is
2827 responsible for ensuring the proposed hydraulic and organic design capacities concur with the
2828 WQPTs and intended final design and permitted flow rates prior to submitting the application
2829 for site location approval.

2830
2831 The Division will not initiate a site location review prior to receiving appropriate fees for the
2832 proposed treatment works, and will not complete a site location decision prior to receiving all
2833 applicable signatures and providing all review agencies the allotted review times as indicated
2834 in Regulation 22, with the exceptions of non-responsive review agencies. The site location
2835 application shall include dated correspondence to each review agency to demonstrate that
2836 sixty (60) days was allowed for each review. The site location application shall include
2837 original ink signatures, scanned copies of the original signatures, or electronic signatures from
2838 the applicant and review agencies, and comments if provided.

2839

2840 **22.7(1)(a) Availability of Submittal Forms**

2841 As identified above, the forms required for the site location and design application process
2842 are available on the Division's web page. For those applicants who do not have access to the
2843 forms electronically, paper copies can be obtained through the Division's office at 4300
2844 Cherry Creek Drive South, Denver, Colorado 80246-1530.

2845

2846 **22.7(1)(b) Engineering Report for Decrease in Design Capacity to 2,000 gpd or Less**

2847 For projects involving a decrease in the design capacity of an existing treatment works to
2848 2,000 gpd or less, the applicant shall prepare and submit an engineering report as part of the
2849 application process for site location approval. The engineering report shall be prepared,
2850 signed, and sealed by a State of Colorado licensed professional engineer in accordance with
2851 the *Bylaws, Rules and Policies of the State Board of Licensure for Architects, Professional*
2852 *Engineers, and Professional Land Surveyors* issued by DORA. Regulation 22 specifically states
2853 that the engineering report shall document the basis for decreasing the hydraulic and/or
2854 organic capacity and address consistency with local wastewater facility plans and any
2855 approved 208 plans. This report shall completely address the items as identified in each of
2856 the Sections 22.7(1)(b)(i) through 22.7(1)(b)(v) of Regulation 22 and as guided by this policy.
2857 Additionally, the engineering report shall address and allow the Division to consider the issues
2858 discussed in Sections 22.3 and 22.5. Many of the items required by Sections 22.3 and 22.5 are
2859 covered by the information described within Section 22.7(1)(b). To that extent, the applicant
2860 shall refer to Sections 22.3 and 22.5 to ensure all relevant material is addressed and included
2861 in the engineering report.

2862

2863 **22.7(1)(b)(i) Service Area, Population, and Loading Changes**

2864 The engineering report shall define the boundaries of the service area for the design life of
2865 the existing or proposed treatment works. The service area may be expressed in a variety of
2866 ways depending on the nature of the service area. The service area definition should be

2867 supported with adequate maps, legal property boundaries and descriptions, structures served,
2868 and/or specific land use descriptions. The engineering report shall provide both narrative and
2869 visual descriptions of the service area. As part of the service area definition, the engineering
2870 report shall indicate the location of the treatment works. Depicting topography, local water
2871 bodies, streams, rivers, wetlands, endangered species habitat, domestic wells, drinking water
2872 treatment plant intakes and other treatment works aids with the review of the site location
2873 application, and must also be included on the service area map(s). The map(s) shall be to
2874 scale to allow the Division to determine set-back distances in accordance with information
2875 provided in this policy.

2876
2877 For all cases, the service area must represent the 20-year planning period, or some other
2878 clearly defined future planning period. This planning period must conform to the approved
2879 208 plan and/or the local long-range comprehensive plan. The applicant shall demonstrate
2880 that the service area is consistent with the approved 208 plan and/or the local long-range
2881 comprehensive plan. For additional information pertaining to the use of local and regional
2882 water quality planning information, refer to the information presented in Sections 22.3(1)(a)
2883 and 22.5(1)(k) of this policy. To demonstrate consistency with these approved plans, the site
2884 location application must address the information identified in this policy. For ease of review,
2885 the engineering report shall include applicable portions of approved plans that have been
2886 referenced.

2887
2888 Based on the service area, the engineering report must clearly estimate the flow and loading
2889 projections to be conveyed to the existing or proposed treatment works for the projected
2890 planning period. The flow and loading projections must include average daily flow, maximum
2891 month average daily flow, peak hour flow (or instantaneous flow value based on the service
2892 area), and the associated organic loads, and must be developed using the design service area
2893 population and unique customer information. Since the majority of projects involving a
2894 decrease in the design capacity to 2,000 gpd or less consist of single use facilities and OWTS,
2895 the following requirements are largely focused on treatment works for these types of
2896 facilities.

2897
2898 Population Projections

2899 Population projections are appropriate for single use service areas and well-defined
2900 residential developments that do not have significant commercial/industrial waste loads. For
2901 single use service areas, such as schools, churches, campgrounds, etc., the population shall
2902 be expressed as the number of each population type at build out or certified occupancy.
2903 Population types for a single use treatment works may include day staff, over-night staff,
2904 visitors, etc. For well-defined residential developments/communities, the engineering report
2905 may rely on historical census data extrapolations or typical household sizes (e.g., single
2906 family equivalent (SFE) = 3.2 persons, multi-family equivalent (MFE) = 2.1 person, etc.) and
2907 household types (zoned R-1, R-2, MFE, etc.) to estimate service area populations. All
2908 information used to develop population estimates must be well documented in the
2909 engineering report.

2910

2911 Flow/Loading Projections

2912 Average Daily Flow: Following the development of population projections, the engineering
2913 report shall develop an average daily flow for the service area over the defined planning
2914 period. When using historical data as the basis, the applicant shall use at least three (3)
2915 relevant years of matched population and flow data. Potable water use data may be
2916 representative of wastewater flow with appropriate adjustments such as subtraction of
2917 outside irrigation water use. If historical data is not available, the engineering report shall
2918 use locally approved planning values for developing wastewater flows for each type of
2919 population. If an approved comprehensive or master plan is not available, the engineering
2920 report shall justify planning values for wastewater flows for each type of population. For
2921 single use service areas and OWTS, the engineering report shall develop the average daily
2922 flow using: 1) at least three (3) years of representative, matched daily population and flow
2923 data, if available, 2) planning values for flow provided in Regulation 43 (or successor), or 3)
2924 other applicable and widely accepted planning or engineering reference manuals. The
2925 engineering report shall include documentation of all references.

2926
2927 Maximum Month Average Daily Flow (Design Capacity): After establishing the average daily
2928 flow, the engineering report shall develop the maximum month average daily flow. For single
2929 use facilities and OWTS, the maximum month average daily flow is at full occupancy, and for
2930 OWTS, the flow values must follow Regulation 43 (or successor) requirements unless justified
2931 otherwise. For sites with significant fluctuations in daily flow, maximum month average daily
2932 flow must consider days with reasonable flow and not minimalist days (e.g., school with 22
2933 days attendance divides monthly flow by 22 days, not 30 days). Some small-scale examples of
2934 maximum month average daily flow at full occupancy include:

- 2935
- 2936 ● A small motel with 24 rooms. Planning values in Regulation 43 would indicate flow of
2937 2,400 gpd (24 rooms, 2 per room, 50 gpcd). Evaluation of existing data with matched
2938 population might show average daily flow is 33 gpcd in January and 38 gpcd in August.
2939 Using the maximum month average daily flow (i.e., 38 gpcd in August) and pairing with
2940 full occupancy, the maximum month average daily flow at full occupancy would be
2941 1,824 gpd (48 people, 38 gpcd).
 - 2942 ● A rural school with 100 students and 20 staff. Planning values in Regulation 43 would
2943 indicate flow of 2,300 gpd (100 students at 20 gpcd with cafeteria but no gym or
2944 showers, 20 staff at 15 gpcd). Evaluation of existing data with matched population
2945 might show average daily flow is 14 gpcd in February and 16 gpcd in October including
2946 students and staff. Using the maximum month average daily flow (i.e., 16 gpcd in
2947 October) and pairing with full occupancy, the maximum month average daily flow at
2948 full occupancy would be 1,920 gpd (120 people, 16 gpcd).

2949
2950 For all other treatment works, the maximum month average daily flow must be tied to a
2951 special event, I&I, commercial and industrial contributions, a seasonal change in water use
2952 for a specific service area, or other justifiable and documented event. Due to the potential
2953 variability, this estimate shall be made using at least three (3) years of historic records. If
2954 historic records are unavailable, the engineering report shall document the basis for the

2955 proposed maximum month peaking factor. When the maximum flow stems from I&I estimates,
2956 the engineering report shall estimate I&I based on a percentage of the average daily flow.
2957 This seasonal flow should be added to the average daily flow as a non-peaked base flow to the
2958 treatment works influent. Unsupported I&I estimates should be a minimum of 10 percent of
2959 the average daily flow. The engineering report shall include documentation of all references.
2960

2961 Peak Hour Flow: The engineering report shall build from the average daily flow estimate to
2962 develop a peak hour design flow or other justified design peak, if deemed necessary based on
2963 the service area. For example, a treatment works providing service only to a sports stadium
2964 may need to accommodate the peak flow from all fixture units operating simultaneously. For
2965 OWTS with a design capacity of 2,000 gpd or less, the design must follow Regulation 43 (or
2966 successor) requirements unless justified otherwise. An OWTS design may include a design
2967 capacity (i.e., maximum month average daily flow at full occupancy) of 2,000 gpd or less
2968 while some system components (e.g., septic tank, soil treatment area) may be larger to
2969 adequately cover some days with above-average flow, thereby allowing permitting by the
2970 local public health agency provided that daily flow monitoring is being periodically reported
2971 to the local agency to confirm the design capacity is not exceeded. Flow equalization is part
2972 of a treatment works. If an OWTS design has flow equalization and design capacity (i.e.,
2973 maximum month average daily flow at full occupancy) of 2,000 gpd or less while some system
2974 components (e.g., septic tank, soil treatment area) are larger to adequately cover some days
2975 with above-average flow, the flow equalization can be used to smooth out peak day flows and
2976 still allow permitting by the local public health agency. However, flow equalization in a
2977 treatment works receiving flows greater than 2,000 gpd for a maximum month average daily
2978 flow at full occupancy will require site application and design review and approval. For all
2979 other treatment works, the engineering report shall develop either a single composite peaking
2980 factor for all types of population/land uses or individual peaking factors for each type of
2981 population. The peaking factors should be developed from at least three (3) years of
2982 historical data. If historical data is not available, the design shall rely on locally approved
2983 peaking factors or industry accepted peaking factor formulas. The engineering report shall
2984 include documentation of all references.
2985

2986 Organic Loading: With the projected service area flows established, the engineering report
2987 shall estimate the organic loading to the treatment works. The engineering report must
2988 consider historical organic loading, special users (commercial, industrial, etc.), typical
2989 domestic organic loads, and local planning requirements. The engineering report shall
2990 evaluate at least three (3) years of historical data. If not available, the engineering report
2991 shall justify the organic loading to the treatment works through an analysis of individual user
2992 types and their anticipated organic loading. For single use facilities and OWTS, where
2993 historical data is unavailable, the engineering report shall rely on the planning values
2994 provided in Regulation 43 (or successor) or other applicable and widely accepted planning or
2995 engineering references. The engineering report shall include documentation of all references.
2996

2997 **22.7(1)(b)(ii) Loading, Capacity, and Performance Analysis of Existing and Proposed**
2998 **Treatment Works**

2999 The engineering report must document and analyze the loading, capacity, and performance of
3000 the existing and proposed treatment works. All information provided in this section of the
3001 engineering report shall be developed from at least three (3) years of historical data, and the
3002 analysis shall include the following, at a minimum:

- 3003
- 3004 1. Percent of existing service area developed (developed area/all developable area) or
3005 facility utilized (average population served/maximum occupancy)
 - 3006 2. Percent loading at maximum month conditions to the treatment works
3007 a. Hydraulic loading to existing treatment works/site location approved hydraulic
3008 design capacity
3009 b. Percent organic loadings/site location approved organic design capacity
 - 3010 3. Existing influent capacity and loading evaluation
3011 a. Average, maximum month, and peak hour (or other pertinent peak) hydraulic
3012 loads
3013 b. I&I
3014 c. Organic and inorganic concentration and mass loadings
 - 3015 4. Existing and Proposed treatment works performance evaluation
3016 a. PFD
3017 b. Evaluation of major unit processes (OWTS: septic tank, pumping and dosing
3018 systems, soil treatment area; Mechanical: preliminary, primary, and secondary,
3019 and tertiary treatment, disinfection, solids handling and treatment; etc.)
3020 i. Average, maximum month, and peak hour hydraulic loading capacities
3021 ii. Average, maximum month, and peak hour organic/inorganic loading
3022 capacities
3023 c. Identify performance limiting factors or processes
 - 3024 5. Effluent discharge evaluation
3025 a. Compliance issues
3026 b. Causal analysis for any discharge limit exceedance
 - 3027 6. Managerial impacts on performance and emergency response plan
 - 3028 7. Financial impacts on performance
- 3029

3030 **22.7(1)(b)(iii) Description of Proposed Modifications**

3031 The engineering report must describe the specific treatment processes and capacities planned
3032 for the proposed treatment works, unless the site location application is for an existing
3033 treatment works that does not require the construction of any modifications. The descriptions
3034 of each treatment process and capacity shall be thorough, and discussed in order of flow
3035 through the proposed treatment works. This information must adequately demonstrate that
3036 the selected treatment processes are capable of complying with the requirements of the
3037 design criteria, Regulation 43, or local county regulations, whichever are applicable.

3038

3039 **22.7(1)(b)(iv) Management Capabilities**

3040 Management capabilities refers to the treatment entity's ability to control the waste
3041 constituent and hydraulic loading to the treatment works, and in this case, the applicant may
3042 use management capabilities as a method to limit the capacity or size of an existing or
3043 proposed treatment works. Treatment entities need to have the capability to control influent
3044 hydraulic and organic loading through a legally enforceable means. This management may be
3045 in the form of user contracts, ordinances, operating agreements, management capabilities to
3046 expand the facilities, etc. The engineering report must address the means to control
3047 hydraulic and organic loading to the treatment works or the alternate management strategy,
3048 and include copies of final user contracts, ordinances, operating agreements, etc. when
3049 required to limit the influent hydraulic flow to the treatment works.

3050

3051 **22.7(1)(b)(v) Evidence of Coordination with the Local Public Health Agency**

3052 The engineering report shall include evidence from the local public health agency indicating
3053 that they have the capacity and are willing to require daily flow monitoring be conducted and
3054 periodically reported to their agency for review. This evidence shall be in the form of
3055 correspondence with the local public health agency, beyond that which is required for this
3056 site location application under Section 22.7(2) of Regulation 22, and shall include an
3057 acknowledgement of agreement with the methodology used to determine that the design
3058 capacity is 2,000 gpd or less and any requirements imposed by the local public health agency.

3059

3060 **22.7(1)(c) Engineering Report for Increase or Decrease in Design Capacity**

3061 For projects involving an increase or decrease in the design capacity of an existing treatment
3062 works, the applicant shall prepare and submit an engineering report as part of the application
3063 process for site location approval. The engineering report shall be prepared, signed, and
3064 sealed by a State of Colorado licensed professional engineer in accordance with the *Bylaws,*
3065 *Rules and Policies of the State Board of Licensure for Architects, Professional Engineers, and*
3066 *Professional Land Surveyors* issued by DORA. Regulation 22 specifically states that the
3067 engineering report shall document the need for the increase or decrease in the design
3068 capacity and consistency with local wastewater facility plans and any approved 208 plans.
3069 This report shall completely address the items as identified in each of the Sections
3070 22.7(1)(c)(i) through 22.7(1)(c)(vii) of Regulation 22 and as guided by this policy. Additionally,
3071 the engineering report shall address and allow the Division to consider the issues discussed in
3072 Sections 22.3 and 22.5. Many of the items required by Sections 22.3 and 22.5 are covered by
3073 the information described within Section 22.7(1)(c). To that extent, the applicant shall refer
3074 to Sections 22.3 and 22.5 to ensure all relevant material is addressed and included in the
3075 engineering report.

3076

3077 **22.7(1)(c)(i) Service Area, Population, and Loading Changes**

3078 The engineering report shall define the boundaries of the service area for the design life of
3079 the proposed treatment works. The service area may be expressed in a variety of ways
3080 depending on the nature of the service area. The service area definition should be supported
3081 with adequate maps, legal property boundaries and descriptions, structures served, and/or
3082 specific land use descriptions. The engineering report shall provide both narrative and visual

3083 descriptions of the service area. As part of the service area definition, the engineering report
3084 shall indicate the proposed location of the treatment works. Depicting topography, local
3085 water bodies, streams, rivers, wetlands, endangered species habitat, domestic wells, drinking
3086 water treatment plant intakes and other treatment works aids with the review of the site
3087 location application, and must also be included on the service area map(s). The map(s) shall
3088 be to scale to allow the Division to determine set-back distances in accordance with
3089 information provided in this policy.

3090
3091 For all cases, the service area must represent the 20-year planning period, or some other
3092 clearly defined future planning period. This planning period must conform to the approved
3093 208 plan and/or the local long-range comprehensive plan. The applicant shall demonstrate
3094 that the service area is consistent with the approved 208 plan and/or the local long-range
3095 comprehensive plan. For additional information pertaining to the use of local and regional
3096 water quality planning information, refer to the information presented in Sections 22.3(1)(a)
3097 and 22.5(1)(k) of this policy. To demonstrate consistency with these approved plans, the site
3098 location application must address the information identified in this policy. For ease of review,
3099 the engineering report shall include applicable portions of approved plans that have been
3100 referenced.

3101
3102 Based on the service area, the engineering report must clearly estimate the flow and loading
3103 projections to be conveyed to the proposed treatment works for the projected planning
3104 period. The flow and loading projections must include average daily flow, maximum month
3105 average daily flow, peak hour flow (or instantaneous flow value based on the service area),
3106 and the associated organic loads, and must be developed using the design service area
3107 population, land use, and unique customer information.

3108
3109 Population/Land Use Projections
3110 The engineering report shall develop flow and loading estimates through population and/or
3111 land use projections.

- 3112
- 3113 • Population Projections: Population projections are appropriate for single use service
3114 areas and well-defined residential developments that do not have significant
3115 commercial/industrial waste loads. For single use service areas, such as schools,
3116 churches, campgrounds, etc., the population shall be expressed as the number of each
3117 population type at build out or certified occupancy. Population types for a single use
3118 treatment works may include day staff, over-night staff, visitors, etc. For well-defined
3119 residential developments/communities, the engineering report may rely on historical
3120 census data extrapolations or typical household sizes (e.g., single family equivalent
3121 (SFE) = 3.2 persons, multi-family equivalent (MFE) = 2.1 person, etc.) and household
3122 types (zoned R-1, R-2, MFE, etc.) to estimate service area populations. All information
3123 used to develop population estimates must be well documented in the engineering
3124 report.
 - 3125 • Land Use Projections: Land use projections are appropriate for significant service
3126 areas with a variety of land uses. Typically, local planning documents use a

3127 combination of open space, floor area ratio, and zoning types to define development
3128 within a service area. The engineering report shall subdivide the service area into land
3129 use types, such as open space, commercial, residential (SFE, R2, MF, etc.), and
3130 translate this information into residential populations, industrial/commercial land use
3131 areas, or building square footages to determine appropriate loading estimates.
3132

3133 Note, general land use estimates may not be considered adequate for special circumstances
3134 (food processing facilities or computer chip manufacturing) in a small community. These
3135 industries may exceed typical average waste loading values used for planning. The
3136 engineering report must deal with these unique circumstances on a case-by-case basis.
3137

3138 Flow/Loading Projections

3139 Average Daily Flow: Following the development of population or land use projections, the
3140 engineering report shall develop an average daily flow for the service area over the defined
3141 planning period. When using historical data as the basis, the applicant shall use at least three
3142 (3) relevant years of matched population/land use and flow data. Potable water use data may
3143 be representative of wastewater flow with appropriate adjustments such as subtraction of
3144 outside irrigation water use. If historical data is not available, the engineering report shall
3145 use locally approved planning values for developing wastewater flows for each type of
3146 population/land use. If an approved comprehensive or master plan is not available, the
3147 engineering report shall justify planning values for wastewater flows for each type of
3148 population/land use. For single use service areas and OWTS, the engineering report shall
3149 develop the average daily flow using: 1) at least three (3) years of representative, matched
3150 daily population and flow data, if available, 2) planning values for flow provided in Regulation
3151 43 (or successor), or 3) other applicable and widely accepted planning or engineering
3152 reference manuals. The engineering report shall include documentation of all references.
3153

3154 Maximum Month Average Daily Flow (Design Capacity): After establishing the average daily
3155 flow, the engineering report shall develop the maximum month average daily flow. For single
3156 use facilities and OWTS, the maximum month average daily flow is at full occupancy, and for
3157 OWTS, the flow values must follow Regulation 43 (or successor) requirements unless justified
3158 otherwise. For sites with significant fluctuations in daily flow, maximum month average daily
3159 flow must consider days with reasonable flow and not minimalist days (e.g., school with 22
3160 days attendance divides monthly flow by 22 days, not 30 days). Some small-scale examples of
3161 maximum month average daily flow at full occupancy include:
3162

- 3163 ● A small motel with 24 rooms. Planning values in Regulation 43 would indicate flow of
3164 2,400 gpd (24 rooms, 2 per room, 50 gpcd). Evaluation of existing data with matched
3165 population might show average daily flow is 33 gpcd in January and 38 gpcd in August.
3166 Using the maximum month average daily flow (i.e., 38 gpcd in August) and pairing with
3167 full occupancy, the maximum month average daily flow at full occupancy would be
3168 1,824 gpd (48 people, 38 gpcd).
- 3169 ● A rural school with 100 students and 20 staff. Planning values in Regulation 43 would
3170 indicate flow of 2,300 gpd (100 students at 20 gpcd with cafeteria but no gym or

3171 showers, 20 staff at 15 gpcd). Evaluation of existing data with matched population
3172 might show average daily flow is 14 gpcd in February and 16 gpcd in October including
3173 students and staff. Using the maximum month average daily flow (i.e., 16 gpcd in
3174 October) and pairing with full occupancy, the maximum month average daily flow at
3175 full occupancy would be 1,920 gpd (120 people, 16 gpcd).

3176
3177 For all other treatment works, the maximum month average daily flow must be tied to a
3178 special event, I&I, commercial and industrial contributions, a seasonal change in water use
3179 for a specific service area, or other justifiable and documented event. Due to the potential
3180 variability, this estimate shall be made using at least three (3) years of historic records. If
3181 historic records are unavailable, the engineering report shall document the basis for the
3182 proposed maximum month peaking factor. When the maximum flow stems from I&I estimates,
3183 the engineering report shall estimate I&I based on a percentage of the average daily flow.
3184 This seasonal flow should be added to the average daily flow as a non-peaked base flow to the
3185 proposed treatment works influent. Unsupported I&I estimates should be a minimum of 10
3186 percent of the average daily flow. The engineering report shall include documentation of all
3187 references.

3188
3189 Peak Hour Flow: The engineering report shall build from the average daily flow estimate to
3190 develop a peak hour design flow or other justified design peak, if deemed necessary based on
3191 the service area. For example, a treatment works providing service only to a sports stadium
3192 may need to accommodate the peak flow from all fixture units operating simultaneously. For
3193 OWTS with a design capacity of 2,000 gpd or less, the design must follow Regulation 43 (or
3194 successor) requirements unless justified otherwise. An OWTS design may include a design
3195 capacity (i.e., maximum month average daily flow at full occupancy) of 2,000 gpd or less
3196 while some system components (e.g., septic tank, soil treatment area) may be larger to
3197 adequately cover some days with above-average flow, thereby allowing permitting by the
3198 local public health agency provided that daily flow monitoring is being periodically reported
3199 to the local agency to confirm the design capacity is not exceeded. Flow equalization is part
3200 of a treatment works. If an OWTS design has flow equalization and design capacity (i.e.,
3201 maximum month average daily flow at full occupancy) of 2,000 gpd or less while some system
3202 components (e.g., septic tank, soil treatment area) are larger to adequately cover some days
3203 with above-average flow, the flow equalization can be used to smooth out peak day flows and
3204 still allow permitting by the local public health agency. However, flow equalization in a
3205 treatment works receiving flows greater than 2,000 gpd for a maximum month average daily
3206 flow at full occupancy will require site application and design review and approval. For all
3207 other treatment works, the engineering report shall develop either a single composite peaking
3208 factor for all types of population/land uses or individual peaking factors for each type of
3209 population/land use. The peaking factors should be developed from at least three (3) years of
3210 historical data. If historical data is not available, the design shall rely on locally approved
3211 peaking factors or industry accepted peaking factor formulas. The engineering report shall
3212 include documentation of all references.

3213

3214 Organic Loading: With the projected service area flows established, the engineering report
3215 shall estimate the organic loading to the proposed treatment works. The engineering report
3216 must consider historical organic loading, special users (commercial, industrial, etc.), typical
3217 domestic organic loads, and local planning requirements. The engineering report shall
3218 evaluate at least three (3) years of historical data. If not available, the engineering report
3219 shall justify the organic loading to the proposed treatment works through an analysis of
3220 individual user types and their anticipated organic loading. For single use facilities and OWTS,
3221 where historical data is unavailable, the engineering report shall rely on the planning values
3222 provided in Regulation 43 (or successor) or other applicable and widely accepted planning or
3223 engineering references. The engineering report shall include documentation of all references.
3224

3225 Staging or Phasing

3226 Based on initial flows and loads, sometimes the proposed treatment works cannot function
3227 effectively especially when designed for the long-range planning associated with the service
3228 area. In this case, the applicant shall develop an operational plan, and this plan shall be
3229 included as part of the site location application rather than during the design review phase.
3230 The operational plan must clearly identify measurable and definitive guidelines for
3231 constraining conditions. Please refer to section 22.13 in this policy for specific information.
3232

3233 22.7(1)(c)(ii) Water Quality Planning Targets

3234 The applicant must submit a *Domestic Water Quality Planning Target/PEL Application Form*
3235 to the Permits Section in order to determine the WQPTs needed for the proposed project.
3236 WQPTs can consist of existing permits, water quality assessments, a permit modification, a
3237 new permit, a PEL document, a limited-scope PEL, or a combination thereof. A copy of the
3238 determination from the Permits Section identifying the document to be used as the WQPTs
3239 shall be included with the engineering report. If the determination requires the applicant to
3240 perform a permit action or obtain PELs for the proposed project, then the applicant must
3241 apply for these documents prior to submitting a site location application for review. For
3242 additional information concerning the WQPT determination process and how to obtain PELs,
3243 the applicant shall refer to the following Permits Section's *Water Quality Planning Targets*
3244 *and Preliminary Effluent Limitations (PELs)* web page:

3245 https://cdphe.colorado.gov/WQ_Planning_Targets_and_PELs.

3246
3247 In the case where PELs are required for the proposed project, the PELs will provide discharge
3248 criteria specific to the stream segment, or groundwater, receiving the discharge at the
3249 proposed design hydraulic capacity. The applicant shall include a copy of the PELs with the
3250 site location application. If there are questions regarding the validity of older PELs, the
3251 application should refer to the November 2020 Division guidance document, [Establishment of](#)
3252 [Water Quality Planning Targets and PELs](#). When PELs are no longer valid, the applicant shall
3253 be required to obtain a new determination of WQPTs. Note, the request for new WQPTs by
3254 the applicant may inherently delay the site location application review by the Division.
3255

3256 When PELs are developed for the proposed project, the PEL document will establish
3257 limitations for three (3) sets of parameters.

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1. The first set of parameters may contain the following: BOD, TSS, E. coli, pH, nitrogen species (i.e., ammonia, nitrate, nitrite, TIN, and TN), TRC, and TP. The Division may also include other parameters in the first set of limitations, particularly where a current permit includes a limit for a given parameter. During the site location application process, the Division will evaluate the selected treatment alternative to ensure the technology can meet the limitations defined for the first set of parameters.
2. The second set of parameters may contain all of the metals, inorganic parameters, and WET testing for which numeric standards have been adopted by the Commission for the receiving stream segment, or groundwater, and proximate downstream segments, except those included in the first set of parameters. During the site location application process, the Division may or may not evaluate the selected treatment alternative to ensure the technology can meet the limitations defined for the second set of parameters depending on how the applicant plans to address these limitations. The limitations contained in this second set may be able to be met by the development of a pretreatment program, the refinement of local limits under an existing pretreatment program, or other methods of source water control. In these instances, the ability of the treatment works to meet these limitations will not be reviewed under the site location application process and are the responsibility of the permittee. If treatment or other operational control methods are to be used specific to a parameter(s) in the second set, the ability of the treatment works to meet the limitation(s) will be reviewed under the site location application process.
3. The third set of parameters may contain a summary of potential Regulation 31 nutrient limitations that have been developed for the PEL. The WQBELs expressed in the third set of parameters are based on standards that have not yet been adopted by the Commission, but become effective December 31, 2027, as currently written. The values are provided for planning purposes in order to assist the applicant in long-term planning for nutrient removal. This may be especially beneficial for applicants using the SRF program or other federal funds to finance a proposed project, where the applicant is required to perform an alternatives analysis projecting current and future costs for specific treatment processes.

Where a Temporary Modification of a Standard for the Second Set Parameters or a Site-Specific Ambient-Based Standard Has Been Approved by the Commission

Where a temporary modification is in place (at the time the Division begins working on the PELs) for a parameter which is based on significant uncertainty regarding the water quality standard necessary to protect current and/or future uses, or which is based on significant uncertainty regarding the extent to which existing quality is the result of natural or irreversible human-induced conditions, the Division will determine the appropriate PEL based on Section 31.9(4) of Regulation 31. Where another type of temporary modification is in place (i.e., one based on significant uncertainty regarding the timing of implementing attainable source controls or treatment), the PEL will be set based on the underlying standard.

3301 Where a site-specific, ambient-based standard has been approved by the Commission and is in
3302 place at the time the Division begins working on the PELs, the PEL for that parameter will be
3303 based on the site-specific standard.

3304

3305 **22.7(1)(c)(iii) Loading, Capacity, and Performance Analysis of Existing Treatment Plant**

3306 As part of the planning stage, the engineering report must document and analyze the loading,
3307 capacity, and performance of the existing treatment works. All information provided in this
3308 section of the engineering report shall be developed from at least three (3) years of historical
3309 data, and the analysis shall include the following, at a minimum:

3310

- 3311 1. Percent of existing service area developed (developed area/all developable area)
- 3312 2. Percent loading at existing maximum month conditions to the treatment works
 - 3313 a. Hydraulic loading to existing treatment works/site location approved hydraulic
 - 3314 design capacity
 - 3315 b. Percent organic loading/site location approved organic design capacity
- 3316 3. Existing influent capacity and loading evaluation
 - 3317 a. Average, maximum month, and peak hour (or other pertinent peak) hydraulic
 - 3318 loads
 - 3319 b. I&I
 - 3320 c. Organic and inorganic concentration and mass loadings
- 3321 4. Treatment works performance evaluation
 - 3322 a. PFD
 - 3323 b. Evaluation of major unit processes (preliminary, primary, secondary, and
 - 3324 tertiary treatment, disinfection, solids handling and treatment, etc.)
 - 3325 i. Average, maximum month, and peak hour hydraulic loading capacities
 - 3326 ii. Average, maximum month, and peak hour organic/inorganic loading
 - 3327 capacities
 - 3328 c. Identify performance limiting factors or processes
- 3329 5. Effluent discharge evaluation
 - 3330 a. Compliance issues
 - 3331 b. Causal analysis for any discharge limit exceedance
- 3332 6. Managerial impacts on performance and emergency response plan
- 3333 7. Financial impacts on performance

3334

3335 **22.7(1)(c)(iv) Analysis of Treatment Alternatives**

3336 The engineering report must include an analysis of means to treat the increased or decreased
3337 hydraulic or regulated loadings to the treatment works, and include a detailed description of
3338 the “selected alternatives” for the proposed project.

3339

3340 **Alternatives Analysis**

3341 The alternatives analysis shall evaluate each proposed alternative in accordance with Sections
3342 22.3(1)(a) through 22.3(1)(c) of Regulation 22, and shall discuss each alternative in detail
3343 with respect to meeting the required degree of treatment to satisfy the WQPTs, capital costs,

3344 projected O&M, ease of operation, operator flexibility, potential for expansion or
3345 modification, and applicability to each potential site.

3346

3347 Consolidation Analysis

3348 The engineering report shall include an analysis of opportunities for consolidation of
3349 treatment works in accordance with the provisions of Section 22.3(1)(c), which identifies that
3350 the Division shall encourage the consolidation of treatment works whenever feasible. The
3351 applicant shall refer to Section 22.3(1)(c) of this policy for the specific factors to be
3352 considered in the consolidation analysis and discussed as part of the engineering report.

3353 These factors may either be used as a means to support consolidation or consider
3354 consolidation infeasible. The consolidation analysis shall also take into account any
3355 recommendations established in the local long-range comprehensive plan or 208 plan, as well
3356 as the input provided by the appropriate review agencies, and shall not be used as a means to
3357 diminish the consideration given to these plans.

3358

3359 Selected Alternative Discussion

3360 Based on the results of the alternatives analysis, the engineering report must describe the
3361 specific treatment processes and capacities proposed for both the liquid and solid streams at
3362 the proposed treatment works. The report shall address how the proposed treatment process
3363 will meet the WQPTs unless specifically omitted through pretreatment, specific source
3364 controls, or other means discussed in Section 22.7(1)(c)(ii) of Regulation 22. The descriptions
3365 of each treatment process and capacity shall be thorough and discussed in order of flow
3366 through the proposed treatment works. This preliminary information must adequately
3367 demonstrate that the selected treatment processes are capable of complying with the
3368 requirements of the design criteria and have the ability to achieve continuous compliance
3369 with the WQPTs.

3370

3371 22.7(1)(c)(v) Financial System Changes

3372 The Division interprets Section 22.7(1)(c)(v) of Regulation 22 to apply to the treatment
3373 entity's overall ability to generate funds, set rates, and earmark funds for acceptable waste
3374 treatment through institutional arrangements such as contracts and CCRs following any
3375 increase or decrease in the design capacity of the treatment works. Capacity changes may
3376 have an impact on institutional arrangements, the capacity to fund capital improvements,
3377 operations, and maintenance, and annual budgets. The engineering report shall discuss how
3378 the capacity changes impact all factions of the financial system.

3379

3380 Institutional Arrangements

3381 The engineering report shall include copies of institutional arrangements that demonstrate
3382 the applicant's ability to pay for acceptable waste treatment. The institutional arrangements
3383 must clearly indicate how the applicant has the authority to control rates and set aside funds
3384 for capital, operational, and maintenance improvements/programs over the life of the
3385 project.

3386

3387 Under special conditions, multiple treatment entities may own and operate a single
3388 treatment works. The engineering report must discuss how the institutional agreements
3389 stipulate funding to provide adequate treatment and demonstrate institutional arrangements
3390 with individual users or other service areas through a legally enforceable mechanism.

3391

3392 Financial System

3393 The financial system associated with construction, operating, and maintaining the proposed
3394 treatment works must include evidence of sufficient financial resources to construct the
3395 facility, as well as a financial plan to generate revenue sufficient to repay any indebtedness
3396 and cover ongoing operational expenses.

3397

3398 Funding for Privately Owned Treatment Works and Developers

3399 If the applicant intends to finance the project independently, evidence of such financial
3400 capability in the form of written communication from a financial institution attesting to the
3401 applicant's possession of adequate capital to undertake the proposed project must be
3402 included with the engineering report. In the event that the applicant requires a loan to
3403 complete the project, the engineering report must include a letter from a financial
3404 institution, bond advisor, or other loan program indicating its intent to make such a loan for
3405 the purpose of constructing the proposed treatment works.

3406

3407 Funding for Municipal Treatment Works

3408 For municipal or publicly financed treatment works, the applicant must address capital
3409 construction capabilities by demonstrating available cash resources through including copies
3410 of current budget documents with the engineering report. If the applicant intends to finance
3411 the project using loan and grant funds, the engineering report must include documentation
3412 from any provider agreeing to issue loans and/or grants for the proposed project including the
3413 SRF program. If the applicant intends to fund the project using bonds, the engineering report
3414 must include a copy of the report from a bond advisor or intended bond underwriter.

3415

3416 Applicants using Borrowed Funds to Finance the Treatment Works

3417 All applicants relying on borrowed funds must develop and present a financial plan for
3418 repaying the borrowed funds, along with any fees and interest associated with the
3419 transaction. The plan must address the full term of the payback period and not just
3420 demonstrate a pattern of anticipated revenue generation. If applicable, the financial plan
3421 must also identify a fee structure for the retirement of capital costs associated with the
3422 proposed project, as well as any process expansions or equipment/structure replacements
3423 funds required within the planning period. The fee structure must include system
3424 development fees and monthly user fees. Public municipalities may satisfy these
3425 requirements by providing the current fee structure, rate studies, and fee ordinance that
3426 demonstrates procedures for rate and fee adjustments and relevant budget documents.

3427

3428 Ultimately, the engineering report must include a financial system that outlines how the
3429 applicant can provide the necessary funds for construction, operation, maintenance, and
3430 capital projects for the life of the project. The financial system must provide sufficient

3431 information to show that the treatment entity that oversees the proposed treatment works
3432 has adequate financial capacity over a 20-year period or some other clearly defined future
3433 planning period. In addition to the long-range financial plan, the Division expects the
3434 engineering report to include a projected 5-year budget, including annual costs and revenues,
3435 rate and fee structures, reserve funds (i.e., emergency replacements), and operating
3436 expenses. At a minimum, the financial system must include a discussion of the following
3437 items:

- 3438
- 3439 1. Itemization of projected expenses and revenues including such costs as equipment
3440 O&M and required sampling;
 - 3441 2. Comparison of all anticipated wastewater revenues and planned expenditures for a 20-
3442 year period or some other clearly defined future planning period;
 - 3443 3. Identification of reserve accounts for emergencies/replacement funding and O&M
3444 funds;
 - 3445 4. Access to public and private financial capital;
 - 3446 5. Revenues must be greater than costs including an operating ratio greater than 1.0
3447 (operating revenue/operating expense) and coverage ratio greater than 1.0 (total
3448 revenue-operating expense/debt service);
 - 3449 6. Current outstanding debt and ability to borrow funds;
 - 3450 7. Periodic financial audits;
 - 3451 8. Annual development and utilization of budget;
 - 3452 9. Rate structure based on customer, flow, and/or waste type; and
 - 3453 10. Capital improvements plan.

3454

3455 **22.7(1)(c)(vi) Implementation Schedule**

3456 The engineering report must include an implementation schedule for the proposed treatment
3457 works. The schedule shall be presented in the form of a timeline or Gantt chart with a
3458 written narrative discussing critical milestones to meet the proposed start-up date (month
3459 and year). At a minimum, the schedule shall include the estimated time to construct the
3460 proposed treatment works from the commencement of construction to start-up, any staging
3461 or phasing discussed as part of Section 22.6(1)(b)(i) of Regulation 22, and the projected start-
3462 up date. Additional information, such as projected site location approval, design review
3463 submittal, design approval, and bid award dates can assist the Division in visualizing the
3464 applicant's overall schedule.

3465

3466 **22.7(1)(c)(vii) Geotechnical Conditions**

3467 Regulation 22 indicates that the engineering report must include the information used to
3468 evaluate geotechnical conditions at the proposed and alternative sites. Since geotechnical
3469 conditions of each alternative site may impact the ultimate location of the proposed
3470 treatment works, the engineering report shall only be required to discuss the general
3471 geotechnical conditions at each alternative site due to the potential cost implications, but
3472 shall be required to provide a site-specific geotechnical investigation for the proposed site
3473 located within the boundaries of the existing site location approval.

3474

3475 For the proposed site, the applicant has two ways to address the site location application
3476 requirements within the engineering report, which include either providing preliminary
3477 geotechnical information or a formal geotechnical report.

3478

3479 Preliminary Geotechnical Information

3480 First, the engineering report can include preliminary geotechnical information for the
3481 selected site comprised of reference materials available from the Natural Resource
3482 Conservation Service (i.e., Soil Surveys), Colorado Geological Survey, on-site or nearby
3483 geotechnical investigations, or other geotechnical data deemed representative of the site.
3484 The preliminary geotechnical information for all proposed groundwater discharges must
3485 provide an indication of anticipated percolation rates or include soil profile test pit
3486 information from similar conditions completed in accordance with Regulation 43 (or
3487 successor) or overriding local requirements. In using the preliminary geotechnical
3488 information, Regulation 22 identifies that the information provided must be sufficient for
3489 “that person” to make a determination that the site can reasonably be expected to support
3490 the proposed treatment works. The Division interprets “that person” to be a professional
3491 geologist or a Colorado licensed professional engineer with an appropriate level of experience
3492 investigating geologic site conditions. The Division expects “that person” to either review or
3493 create the data provided within the engineering report, and provide a statement indicating
3494 that the selected site can reasonably be expected to support the proposed treatment works.
3495 The engineering report shall continue to build on the materials provided with the preliminary
3496 geotechnical information by discussing the impact of the findings at each alternative site on
3497 the design, construction, operation, and maintenance of the proposed treatment works.

3498

3499 Note that Section 22.7(1)(c)(vii) of Regulation 22 states that the Division may require that
3500 geotechnical evidence be presented in the form of a report. The Division interprets this to
3501 mean that the applicant must submit a geotechnical report for all proposed treatment works
3502 during the site location application or design review process, unless waived by the Division in
3503 writing.

3504

3505 Formal Geotechnical Report

3506 Thus, the applicant may submit a formal geotechnical report instead of preliminary
3507 geotechnical information for the selected site location of the treatment works at the time of
3508 site location application. The applicant may also use a formal geotechnical report prepared
3509 for previous work conducted at the existing treatment works to fulfill this requirement. At a
3510 minimum, this geotechnical report shall include site-specific soil boring information that
3511 discusses seasonal and measured groundwater conditions, soil bearing capacity, excavation
3512 benching, shoring, and sloping, bedding and backfill, compaction and moisture conditioning,
3513 alternative foundation design, an analysis of geotechnical hazards, and design
3514 recommendations based on the findings. The geotechnical report for all proposed
3515 groundwater discharges must provide percolation test data at the proposed discharge
3516 elevation or must present soil profile test pit information completed in accordance with
3517 Regulation 43 (or successor). Per Regulation 22, the Division may require a geotechnical
3518 report stating that the site will support the proposed treatment works. When the minimum

3519 requirements of the geotechnical report are met, the Division considers the associated design
3520 recommendations contained within the report to indicate that the site will support the
3521 proposed treatment works. At this point, the submittal of the formal geotechnical report
3522 would fulfill the geotechnical submittal requirements for both the site location and design
3523 application submittal, and resubmittal of the geotechnical report during the design review
3524 process is not required.

3525

3526 Conditional Site Location Approval based on Preliminary Geotechnical Information

3527 If the engineering report only includes preliminary geotechnical information as a means to
3528 determine that the site can reasonably be expected to support the proposed treatment
3529 works, then the site location approval will be issued conditionally upon the applicant
3530 providing a formal geotechnical report as part of the design review submittal. Additionally, if
3531 the applicant receives a conditional site location approval based on only preliminary
3532 geotechnical information but the formal geotechnical report submitted during the design
3533 review phase indicates that the site will not support the proposed treatment works, the
3534 applicant shall provide a statement as such in writing to the Division. The Division may modify
3535 the original site location approval, which may require the applicant to reapply for a site
3536 location approval at an alternate site under Section 22.6 of Regulation 22.

3537

3538 22.7(2) Submittal of Application for Agency Reviews

3539 For projects submitted under Sections 22.7(1)(b) and 22.7(1)(c) of Regulation 22, the
3540 applicant is required to provide copies of the site location application and engineering report
3541 to the review agencies in accordance with the procedures specified in Section 22.6(2) prior to
3542 submission to the Division. The agencies will evaluate the site location application based on
3543 each agency's plans, policies, rules and regulations, which may include the 208 plan for the
3544 area, should such a plan exist. The applicant must perform all necessary coordination and
3545 supply all information to the agencies. The applicant is responsible for obtaining all necessary
3546 signatures on the site location application before submitting it to the Division. These agencies
3547 may include the county, city or town, local health authority, designated planning and/or
3548 management agency, and any other state or federal agency (for a list of county health
3549 agencies and 208 planning and management agencies refer to Appendix B). These agencies
3550 shall review and recommend approval or denial of the site location application to the
3551 Division.

3552

3553 Each review agency may recommend approval by simply signing and dating the site location
3554 application on the provided signature line. The agencies are welcome to provide a letter of
3555 approval to accompany the site location application, and are encouraged to include a letter
3556 citing specific concerns or if their approval hinges on specific conditions. For the agencies
3557 who are recommending denial of the site location application, in addition to signing the site
3558 location application and indicating that a denial is recommended, the agency must also
3559 provide a written statement explaining the reason(s) for recommending denial of the site
3560 location application.

3561

3562 The applicant shall provide each review agency at least 60 days to review the site location
3563 application and engineering report. The applicant may submit the site application to the
3564 Division prior to 60 days if all agencies provided comments, or after the 60 day period should
3565 any agency not provide a signature or comment letter. The Division shall contact non-
3566 responsive agencies, and provide seven (7) additional days to any agency that does not
3567 provide a signature or comment letter. Following the seven (7) days of additional time, the
3568 Division will proceed with its review of the site location application.

3569
3570 Any modification made to the site location application to address comments from any review
3571 agency shall be transmitted to each review agency. Any and all changes that are made to
3572 address comments shall be documented in the final submittal to the Division. The site
3573 location application shall further include any correspondence between the applicant and each
3574 agency.

3575
3576 Additionally, if the applicant finds that change impacting the design capacity is required
3577 following the issuance of the site location approval, the applicant must notify the review
3578 agencies in accordance with Section 22.4(14) of Regulation 22.

3579 **22.8 SITE LOCATION APPLICATION PROCEDURES FOR INTERCEPTORS AND CERTIFICATION**
3580 **PROCEDURES FOR ELIGIBLE INTERCEPTOR SEWERS**

3581
3582 As defined by Regulation 22, an interceptor sewer is a sewer line with a nominal pipe
3583 diameter equal to or greater than 24 inches, that performs one or more of the following
3584 functions as its primary purpose:

- 3585
- 3586 1. Intercepts domestic wastewater from a final point in a collection system and conveys
3587 such waste directly to a treatment plant;
 - 3588 2. It is intended to replace an existing treatment plant or lift station and transports the
3589 collected domestic wastewater to an adjoining collection system or interceptor sewer
3590 for treatment;
 - 3591 3. It transports the domestic wastes from one or more municipal collection systems to a
3592 regional treatment plant; or
 - 3593 4. It is intended to intercept an existing major discharge of raw or inadequately treated
3594 wastewater for transport directly to another interceptor sewer, lift station, or
3595 treatment plant.

3596
3597 Note, for projects funded with SRF or federal funds obtained through the Division, design
3598 approval may be required for interceptors and collection sewers regardless of size.
3599 Additionally, construction of a parallel interceptor requires site location approval, whether or
3600 not the existing line will be abandoned.

3601
3602 Applicants submitting a site location application for existing interceptors without site location
3603 and design approval should refer to Appendix C (Historical Lift Station and Interceptor Interim
3604 Implementation) prior to submittal of the application.

3605
3606 **22.8(1) Interceptors Eligible for Certification**

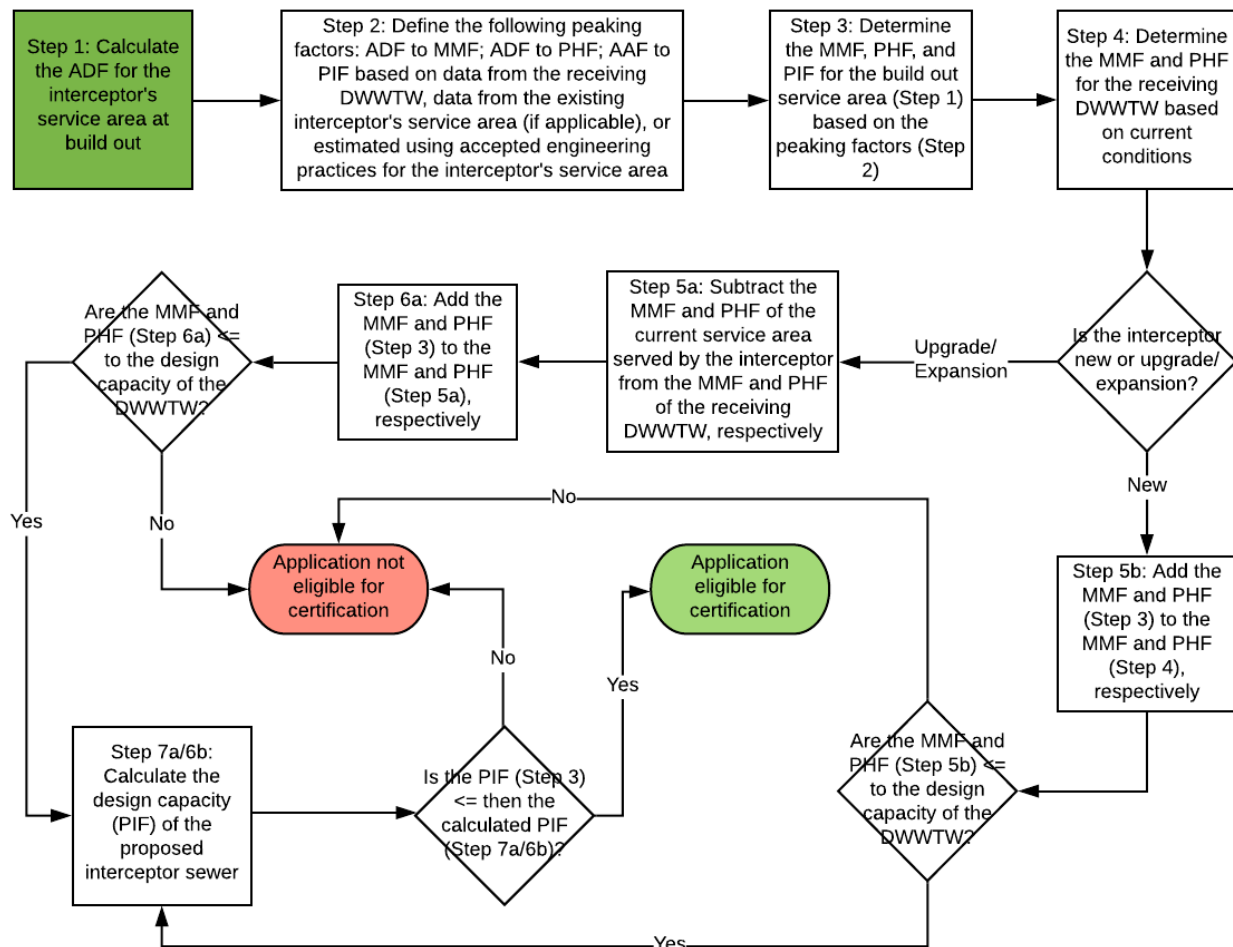
3607 The application process for interceptors has two possible pathways: (1) interceptors eligible
3608 for certification and (2) interceptors not eligible for certification. The two processes have
3609 similar application requirements, but in certain circumstances an interceptor eligible for
3610 certification may streamline some components of the site location application process.

3611 Interceptor sewers are eligible for certification only if the following:

- 3612
- 3613 ● The treatment entity (that will be receiving the wastewater) has certified that the
3614 receiving treatment works has adequate treatment capacity, or currently has site
3615 location approval for sufficient additional capacity to treat the projected total flow
3616 and that the projected total flow would be under their current permit flow limitation
3617 after the interceptor sewer is completed. A written certification by the treatment
3618 entity receiving the wastewater is required to demonstrate compliance with this
3619 requirement. This certified capacity requirement also applies to the infrastructure
3620 associated with any intermediary wastewater collection system works;

- The interceptor sewer will be capable of carrying the projected total flows from the applicable service area at build out as certified by the designated planning agency (if relevant); and
- The project is consistent with the 208 Plan (if relevant). The applicable designated planning agency (if one exists) is willing to certify the interceptor. A written certification by the designated planning agency for the area is required to demonstrate compliance with this requirement. If no designated planning agency exists, a complete request for certification must be submitted to the Division.

The applicant must complete the steps in the following flowchart to determine whether the proposed interceptor site location application qualifies for the certification process. The data associated with this analysis must be submitted along with the application. If the flowchart leads the applicant to the oval titled “Application not eligible for certification”, the applicant must pay fees for and apply for a site location decision using the not eligible for certification application process.



3636
 3637 **Figure 8-1 Data and Decisions Flowchart Used to Determine Eligibility for Certification**
 3638

3639 An interceptor project that qualifies for certification may apply in accordance with Section
 3640 22.8(2) of Regulation 22, and an interceptor project that does not qualify for the certification

3641 process must apply in accordance with Section 22.8(3). These two processes are described in
3642 the following sections.

3643

3644 **22.8(2) Interceptor Eligible for Certification Submittal Requirements/Expectations**

3645 The system shall prepare and include the following forms and information for submittal to the
3646 Division:

3647

- 3648 ● [Fee Information Request Form](#);
- 3649 ● [Section 22.8 - Interceptor Sewer Eligible for Certification](#); and
- 3650 ● Engineering Report.

3651

3652 The site location application, including the necessary forms, shall be submitted electronically
3653 to the Division using the following email address: CDPHE.WQEngReview@state.co.us. The
3654 Division prefers one (1) complete electronic application, and may request a paper copy for all
3655 or part of the application, as required to facilitate the review process. The applicant must fill
3656 in the forms completely and accurately prior to submission to the Division. All information
3657 provided on the application must conform to the requirements set forth in Regulation 22 and
3658 in this policy. The Division will not initiate a site location review prior to receiving
3659 appropriate fees for the proposed treatment works, and will not complete a site location
3660 decision prior to receiving all applicable signatures and providing all review agencies the
3661 allotted review times as indicated in Regulation 22, with the exception for non-responsive
3662 review agencies.

3663

3664 The engineering report that accompanies the site location application must meet all
3665 requirements of Section 22.8 of Regulation 22, including containing all information the
3666 Division must consider pursuant to Sections 22.3 and 22.5.

3667

3668 The following sections describe the certification process depending on whether a designated
3669 planning agency for the area exists external to the Division.

3670

3671 **If There is a Designated Planning Agency for the Area External to the Division:**

3672 1. Ninety (90) days prior to the commencement of construction of an interceptor sewer,
3673 the applicant responsible for that sewer shall notify the designated planning agency
3674 and the Division of the proposed interceptor sewer project. The notification must
3675 contain the following information:

3676

- 3677 ● The completed and signed form;
- 3678 ● Name of the applicant constructing the interceptor sewer;
- 3679 ● Name of the treatment entity certifying the treatment capacity of the
3680 receiving treatment works and the written capacity certification (letter);
 - 3681 ○ The proposal must be discussed with the receiving treatment entity to
3682 determine if the treatment works (that will be receiving the
3683 wastewater) has adequate capacity, or currently has site location
3684 approval for sufficient additional capacity to treat the projected total

- 3685 flow and load (interceptor capacity at service area build out) and that
3686 this flow value would be under their current permit flow limitation after
3687 the interceptor sewer is completed. Written certification by the
3688 treatment entity receiving the wastewater is required to demonstrate
3689 compliance with this requirement.
- 3690 ● Name of any intermediary wastewater collection system and a statement
3691 certifying the treatment capacity and the written capacity certification (letter)
3692 by the intermediate municipality receiving the wastewater;
 - 3693 ○ The proposal must be discussed with all owners of intermediary
3694 sewerage conveyances to determine if the conveyance has adequate
3695 capacity, or currently has site location approval for sufficient additional
3696 capacity to convey the projected total flow and load (interceptor
3697 capacity at service area build out) from the proposed service area and
3698 that this flow value would be under their currently approved site
3699 location design capacity for each conveyance structure. The application
3700 must include written certifications by all intermediary municipalities
3701 that convey the wastewater are required to demonstrate compliance
3702 with this requirement.
 - 3703 ● Information developed based on the data and decisions used to determine
3704 eligibility for certification must be submitted as part of the application.
3705 Preliminary planning for an interceptor sewer must involve delineation of the
3706 service area, calculations of population projections and calculations of
3707 expected wastewater loading and flows. Peak instantaneous flow, peak hour
3708 flow, maximum month average daily flow, and the annual average projected
3709 total flows from the applicable service area must be provided. These values
3710 must be evaluated against the carrying and treatment capacities of
3711 downstream, receiving treatment works. The information must clearly
3712 demonstrate that the interceptor is eligible for certification;
 - 3713 ● Map of the interceptor alignment and documentation demonstrating legal
3714 control of the site;
 - 3715 ● Summary of geotechnical issues (unsuitable soils, high groundwater level) and
3716 any special design considerations (separation of sewer lines and drinking water
3717 lines, etc.);
 - 3718 ● Brief description of the service area or map; and
 - 3719 ● Projected interceptor sewer organic loading.
- 3720
- 3721 2. Within 30 days of receipt of notification, the designated planning agency shall certify
3722 that the proposed interceptor sewer has the capacity to carry the projected flow and
3723 is consistent with the 208 Plan. This certification shall be sent to the Division and the
3724 applicant;
 - 3725 3. In the event the applicant responsible for an interceptor sewer does not have the
3726 required certifications from the treatment entity and the designated planning agency,
3727 the interceptor is not eligible for certification and the applicant responsible shall be
3728 required to obtain site location approval from the Division, prior to construction;

- 3729 4. The Division will review the submittal to confirm that the interceptor is eligible for
3730 certification and acknowledge the designated planning agency certification in writing;
3731 and
3732 5. The applicant self certifies the final design documents unless the Division requires the
3733 applicant to submit a basis of design report for review and approval.
3734

3735 *If There is Not a Designated Planning Agency for the Area:*

- 3736 1. Ninety (90) days prior to the commencement of construction of an interceptor sewer,
3737 the applicant responsible for that sewer shall provide written notification to the
3738 Division and all local management agencies of the proposed interceptor sewer project.
3739 The notification must contain the following information:
3740

- 3741 ● The completed and signed form;
3742 ● Name of the applicant constructing the interceptor sewer;
3743 ● Name of the treatment entity certifying the treatment capacity of the
3744 receiving treatment work and the written capacity certification (letter);
3745 ○ The proposal must be discussed with the receiving treatment entity to
3746 determine if treatment works (that will be receiving the wastewater)
3747 has adequate capacity, or currently has site location approval for
3748 sufficient additional capacity to treat the projected total flow and load
3749 (interceptor capacity at service area build out) and that this flow value
3750 would be under their current permit flow limitation after the
3751 interceptor sewer is completed. Written certification by the treatment
3752 entity receiving the wastewater is required to demonstrate compliance
3753 with this requirement.
3754 ● Name of any intermediary wastewater collection system and a statement
3755 certifying the treatment capacity and the written capacity certification (letter)
3756 by the intermediate municipality receiving the wastewater;
3757 ○ The proposal must be discussed with all owners of intermediary
3758 sewerage conveyances to determine if the conveyance has adequate
3759 capacity, or currently has site location approval for sufficient additional
3760 capacity to convey the projected total flow and load (interceptor
3761 capacity at service area build out) from the proposed service area and
3762 that this flow value would be under their currently approved site
3763 location design capacity for each conveyance structure. The application
3764 must include written certifications by all intermediary municipalities
3765 that convey the wastewater are required to demonstrate compliance
3766 with this requirement.
3767 ● Information developed based on the data and decisions used to determine
3768 eligibility for certification must be submitted as part of the application.
3769 Preliminary planning for an interceptor sewer must involve delineation of the
3770 service area, calculations of population projections and calculations of
3771 expected wastewater loading and flows. Peak instantaneous flow, peak hour
3772 flow, maximum month average daily flow, and the annual average projected

- 3773 total flows from the applicable service area must be provided. These values
3774 must be evaluated against the carrying and treatment capacities of
3775 downstream, receiving treatment works. The information must clearly
3776 demonstrate that the interceptor is eligible for certification;
3777 ● Map of the interceptor alignment and documentation demonstrating legal
3778 control of the site;
3779 ● Summary of geotechnical issues (unsuitable soils, high groundwater level) and
3780 any special design considerations (separation of sewer lines and drinking water
3781 lines, etc.);
3782 ● Brief description of the service area or map; and
3783 ● Projected interceptor sewer organic loading.
3784
- 3785 2. Within 30 days of receipt of a complete notification (which must include all of the
3786 information indicated in (1) above), the Division shall make a determination regarding
3787 whether the proposed interceptor sewer has the capacity to carry the projected flow
3788 and is consistent with the 208 plan, and will issue the written decision (either
3789 certification of the interceptor or denial of the certification request). If the
3790 interceptor is not eligible for certification, the Division will require a full site location
3791 application prior to construction; and
3792 3. The applicant self certifies the final design documents unless the Division requires the
3793 applicant to submit a basis of design report for review and approval.
3794

3795 **22.8(3) Interceptors Not Eligible for Certification Submittal Requirements/Expectations**

3796 The applicant shall prepare and submit the following forms and information to the Division:
3797

- 3798 ● [Fee Information Request Form](#);
3799 ● [Section 22.8 - Interceptor Sewer Not Eligible for Certification](#); and
3800 ● Engineering Report.
3801

3802 The site location application, including the necessary forms, shall be submitted electronically
3803 to the Division using the following email address CDPHE.WQEngReview@state.co.us. The
3804 Division prefers one (1) complete electronic application and may request a paper copy for all
3805 or part of the full application, as required, to facilitate the review process. The applicant
3806 must fill in the forms completely and accurately prior to submission to the Division. All
3807 information provided on the application must conform to the requirements set forth in
3808 Regulation 22 and in this policy.
3809

3810 The Division will not initiate a site location review prior to receiving appropriate fees for the
3811 proposed treatment works, and will not complete a site location decision prior to receiving all
3812 applicable signatures and providing all review agencies the allotted review times as indicated
3813 in Regulation 22, with the exception of non-responsive review agencies. The site location
3814 application must include dated correspondence to each review agency to demonstrate that 60
3815 days was allowed for each review. The site location application must include original ink

3816 signatures, scanned copies of the original signatures, or electronic signatures from the
3817 applicant and review agencies, and comments if provided.

3818

3819 **22.8(3)(a) Availability of Submittal Forms**

3820 As identified above, the forms required for the site location and design application process
3821 are available on the Division's web page. For those applicants who do not have access to the
3822 forms electronically, paper copies can be obtained through the Division's office at 4300
3823 Cherry Creek Drive South, Denver, Colorado 80246-1530.

3824

3825 **22.8(3)(b) Engineering Report**

3826 The applicant shall prepare and submit an engineering report as part of the application
3827 process for site location approval. The engineering report shall be prepared, signed, and
3828 sealed by a State of Colorado licensed professional engineer in accordance with the *Bylaws,*
3829 *Rules and Policies of the State Board of Licensure for Architects, Professional Engineers, and*
3830 *Professional Land Surveyors* issued by the DORA. The engineering report shall describe the
3831 new or expanded interceptor sewer, which is not eligible for certification. This report shall
3832 completely address the items as identified in each of the Sections 22.8(3)(b)(i) through
3833 22.8(3)(b)(vii) of Regulation 22 and as guided by this policy. Additionally, the engineering
3834 report shall address and allow the Division to consider the issues discussed in Sections 22.3
3835 and 22.5. Many of the items required by Sections 22.3 and 22.5 are covered by the
3836 information described within Section 22.8(3). To that extent, the applicant shall refer to
3837 Sections 22.3 and 22.5 to ensure all relevant material is addressed and included in the
3838 engineering report.

3839

3840 **22.8(3)(b)(i) Map Identifying the Site**

3841 The engineering report shall include map(s) identifying the site of the proposed treatment
3842 works, topography of the area, other interceptor connections, and neighboring land uses. To
3843 facilitate processing of the site location application, the map(s) shall also show the proposed
3844 treatment works in relation to boundaries of the service area for the design life of the
3845 treatment works. The map(s) must identify any local water bodies, streams, rivers, wetlands,
3846 endangered species habitat, domestic wells, drinking water treatment intakes, potable water
3847 lines, and treatment plants. The map(s) shall be to scale.

3848

3849 **22.8(3)(b)(ii) Service Area, Population, and Loading Projections**

3850 The engineering report shall define the boundaries of the service area for the design life of
3851 the proposed treatment works. The service area may be expressed in a variety of ways
3852 depending on the nature of the service area. The service area definition should be supported
3853 with adequate maps, legal property boundaries and descriptions, structures served, and/or
3854 specific land use descriptions. The engineering report shall provide both narrative and visual
3855 descriptions of the service area. As part of the service area definition, the engineering report
3856 shall indicate the proposed location of the treatment works. Depicting topography, local
3857 water bodies, streams, rivers, wetlands, endangered species habitat, domestic wells, drinking
3858 water treatment plant intakes and other treatment works aids with the review of the site

3859 location application, and must also be included on the service area map(s). The map(s) shall
3860 be to scale.

3861
3862 For all cases, the service area must represent the 20-year planning period, or some other
3863 clearly defined future planning period. This planning period must conform to the approved
3864 208 plan and/or the local long-range comprehensive plan. The applicant shall demonstrate
3865 that the service area is consistent with the approved 208 plan and/or the local long-range
3866 comprehensive plan. For additional information pertaining to the use of local and regional
3867 water quality planning information, refer to the information presented in Sections 22.3(1)(a)
3868 and 22.5(1)(k) of this policy. To demonstrate consistency with these approved plans, the site
3869 location application must address the information identified in this policy. For ease of review,
3870 the engineering report shall include applicable portions of approved plans that have been
3871 referenced.

3872
3873 Based on the service area, the engineering report must clearly estimate the flow and loading
3874 projections to be conveyed to the proposed treatment works for the projected planning
3875 period. The flow and loading projections must include average daily flow, maximum month
3876 average daily flow, peak hour flow (or instantaneous flow value based on the service area),
3877 and the associated organic loads, and must be developed using the design service area
3878 population, land use, and unique customer information. Once the contributing wastewater
3879 flows are established, the applicant must take into account that the design capacity for an
3880 interceptor sewer, as defined by Section 22.2(8)(d) of Regulation 22, is expressed as the peak
3881 instantaneous hydraulic flow the interceptor is capable of conveying based on the limiting
3882 design conditions (i.e., slope, roughness factor) at a flow depth over internal diameter ratio
3883 of 0.8. The Division may depart from the 0.8 flow depth over internal diameter ratio of 0.8, if
3884 the local jurisdiction has written design criteria that justifies a different depth to diameter
3885 ratio.

3886
3887 Population/Land Use Projections

3888 The engineering report shall develop flow and loading estimates through population and/or
3889 land use projections.

- 3890
- 3891 • Population Projections: Population projections are appropriate for single use service
3892 areas and well-defined residential developments that do not have significant
3893 commercial/industrial waste loads. For single use service areas, such as schools,
3894 churches, campgrounds, etc., the population shall be expressed as the number of each
3895 population type at build out or certified occupancy. Population types for a single use
3896 treatment works may include day staff, over-night staff, visitors, etc. For well-defined
3897 residential developments/communities, the engineering report may rely on historical
3898 census data extrapolations or typical household sizes (e.g., single family equivalent
3899 (SFE) = 3.2 persons, multi-family equivalent (MFE) = 2.1 person, etc.) and household
3900 types (zoned R-1, R-2, MFE, etc.) to estimate service area populations. All information
3901 used to develop population estimates must be well documented in the engineering
3902 report.

- 3903
- 3904
- 3905
- 3906
- 3907
- 3908
- 3909
- 3910
- Land Use Projections: Land use projections are appropriate for significant service areas with a variety of land uses. Typically, local planning documents use a combination of open space, floor area ratio, and zoning types to define development within a service area. The engineering report shall subdivide the service area into land use types, such as open space, commercial, residential (SFE, R2, MF, etc.), and translate this information into residential populations, industrial/commercial land use areas, or building square footages to determine appropriate loading estimates.

3911 Note, general land use estimates may not be considered adequate for special circumstances
3912 (food processing facilities or computer chip manufacturing) in a small community. These
3913 industries may exceed typical average waste loading values used for planning. The
3914 engineering report must deal with these unique circumstances on a case-by-case basis.

3915

3916 Flow/Loading Projections

3917 Average Daily Flow: Following the development of population or land use projections, the
3918 engineering report shall develop an average daily flow for the service area over the defined
3919 planning period. When using historical data as the basis, the applicant shall use at least three
3920 (3) relevant years of matched population/land use and flow data. Potable water use data may
3921 be representative of wastewater flow with appropriate adjustments such as subtraction of
3922 outside irrigation water use. If historical data is not available, the engineering report shall
3923 use locally approved planning values for developing wastewater flows for each type of
3924 population/land use. If an approved comprehensive or master plan is not available, the
3925 engineering report shall justify planning values for wastewater flows for each type of
3926 population/land use. For single use service areas, the engineering report shall develop the
3927 average daily flow using: 1) at least three (3) years of representative, matched daily
3928 population and flow data, if available, 2) planning values for flow provided in Regulation 43
3929 (or successor), or 3) other applicable and widely accepted planning or engineering reference
3930 manuals. The engineering report shall include documentation of all references.

3931

3932 Maximum Month Average Daily Flow: After establishing the average daily flow, the
3933 engineering report shall develop the maximum month average daily flow. For single use
3934 facilities, the maximum month average daily flow is at full occupancy. For sites with
3935 significant fluctuations in daily flow, maximum month average daily flow must consider days
3936 with reasonable flow and not minimalist days (e.g., school with 22 days attendance divides
3937 monthly flow by 22 days, not 30 days). Some small-scale examples of maximum month
3938 average daily flow at full occupancy include:

- 3939
- 3940
- 3941
- 3942
- 3943
- 3944
- 3945
- A small motel with 24 rooms. Planning values in Regulation 43 would indicate flow of 2,400 gpd (24 rooms, 2 per room, 50 gpcd). Evaluation of existing data with matched population might show average daily flow is 33 gpcd in January and 38 gpcd in August. Using the maximum month average daily flow (i.e., 38 gpcd in August) and pairing with full occupancy, the maximum month average daily flow at full occupancy would be 1,824 gpd (48 people, 38 gpcd).

- 3946 • A rural school with 100 students and 20 staff. Planning values in Regulation 43 would
3947 indicate flow of 2,300 gpd (100 students at 20 gpcd with cafeteria but no gym or
3948 showers, 20 staff at 15 gpcd). Evaluation of existing data with matched population
3949 might show average daily flow is 14 gpcd in February and 16 gpcd in October including
3950 students and staff. Using the maximum month average daily flow (i.e., 16 gpcd in
3951 October) and pairing with full occupancy, the maximum month average daily flow at
3952 full occupancy would be 1,920 gpd (120 people, 16 gpcd).

3953
3954 For all other treatment works, the maximum month average daily flow must be tied to a
3955 special event, I&I, commercial and industrial contributions, a seasonal change in water use
3956 for a specific service area, or other justifiable and documented event. Due to the potential
3957 variability, this estimate shall be made using at least three (3) years of historic records. If
3958 historic records are unavailable, the engineering report shall document the basis for the
3959 proposed maximum month peaking factor. When the maximum flow stems from I&I estimates,
3960 the engineering report shall estimate I&I based on a percentage of the average daily flow.
3961 This seasonal flow should be added to the average daily flow as a non-peaked base flow to the
3962 proposed treatment works influent. Unsupported I&I estimates should be a minimum of 10
3963 percent of the average daily flow. The engineering report shall include documentation of all
3964 references.

3965
3966 Peak Flow: The engineering report shall build from the average daily flow estimate to develop
3967 a peak design flow (peak hour and peak instantaneous) or other justified design peak, if
3968 deemed necessary based on the service area. For example, a treatment works providing
3969 service only to a sports stadium may need to accommodate the peak flow from all fixture
3970 units operating simultaneously. The engineering report shall develop either a single composite
3971 peaking factor for all types of population/land uses or individual peaking factors for each type
3972 of population/land use. The peaking factors should be developed from at least three (3) years
3973 of historical data. If historical data is not available, the design shall rely on locally approved
3974 peaking factors or industry accepted peaking factor formulas. The engineering report shall
3975 include documentation of all references.

3976
3977 Organic Loading: With the projected service area flows established, the engineering report
3978 shall estimate the organic loading to the proposed treatment works. The engineering report
3979 must consider historical organic loading, special users (commercial, industrial, etc.), typical
3980 domestic organic loads, and local planning requirements. The engineering report shall
3981 evaluate at least three (3) years of historical data. If not available, the engineering report
3982 shall justify the organic loading to the proposed treatment works through an analysis of
3983 individual user types and their anticipated organic loading. For single use facilities, where
3984 historical data is unavailable, the engineering report shall rely on the planning values
3985 provided in Regulation 43 (or successor) or other applicable and widely accepted planning or
3986 engineering references. The engineering report shall include documentation of all references.

3987
3988
3989

3990 Staging or Phasing

3991 Based on initial flows and loads, sometimes the proposed treatment works cannot function
3992 effectively especially when designed for the long-range planning associated with the service
3993 area. In this case, the applicant shall develop an operational plan, and this plan shall be
3994 included as part of the site location application rather than during the design review phase.
3995 The operational plan must clearly identify measurable and definitive guidelines for
3996 constraining conditions. Please refer to section 22.13 in this policy for specific information.
3997

3998 **22.8(3)(b)(iii) Final Legal Arrangements Demonstrating Control of the Site**

3999 The applicant shall provide sufficient information in the engineering report to demonstrate
4000 that all proposed components of the treatment works exist within the legal boundaries of the
4001 proposed site. The applicant has a number of options to demonstrate control of the site for
4002 the life of the project depending on the control mechanism.
4003

4004 Control of the Site through Ownership

4005 The applicant may demonstrate control of the site through ownership by providing a copy of
4006 the deed or title to the property in the name of the applicant. The Division will accept a copy
4007 of the title insurance, but the applicant must ensure that the title insurance document does
4008 not contain errors regarding ownership, property description, or limitations or restrictions
4009 that would preclude using the property for its intended purpose prior to submitting the
4010 information to the Division. The site location application must disclose and address any
4011 limitations that potentially impact the applicant's ability to maintain, operate, or construct
4012 facilities within the proposed site location for the life of the project.
4013

4014 Control of the Site through Use of Public Right of Ways

4015 In cases where the site location for the proposed treatment works utilizes public right of ways
4016 (ROWs) (e.g., municipal transportation or utility ROWs), the applicant is not required to
4017 demonstrate legal control of the site. However, the engineering report shall provide a map
4018 identifying the boundaries of the site location for the proposed treatment works in
4019 relationship to the public ROWs.
4020

4021 Control of the Site through Use of Right of Ways Across Private Property

4022 Alternatively, the applicant may demonstrate legal control of the site through use of a ROW
4023 across private property. Specific expectations with regard to information for these types of
4024 ROWs (e.g., easements via purchase, lease or condemnation, etc.) and the site location
4025 application are as follows:
4026

- 4027 1. To facilitate as timely a review process as possible, all ROWs that are necessary for
4028 the project shall be obtained prior to submittal of the site location application, and
4029 copies of the documentation for all ROWs shall be included in the submittal.
- 4030 2. Where all ROWs could not be obtained by the time of site location application, at a
4031 minimum, the applicant must identify all ROWs that will be needed for the project,
4032 and an explanation of how they intend to obtain each of the ROWs.
4033

4034 a. For ROWs that do not involve condemnation, signed copies of agreements
4035 concerning the intent to sell/lease between the applicant and land owners (for
4036 which easements are needed) may be submitted to fulfill the legal control
4037 requirement during the site location phase of the project. The copies of
4038 agreements must clearly indicate the terms and conditions of the lease or legal
4039 easement specific to the duration of the agreement in addition to access,
4040 construction, and maintenance of any treatment works located within the
4041 proposed site location for the duration of the agreement.

4042
4043 3. If prior to submittal and by the time that the site location application is submitted:
4044
4045 a. The applicant, which does not require ROWs for the project that involve
4046 condemnation, cannot obtain a signed agreement between the applicant and
4047 each landowner regarding the intent to sell/lease the land; or
4048 b. The applicant, which requires ROWs for the project that involve condemnation,
4049 cannot demonstrate legal control of the site, because the condemnation
4050 process has not been completed.

4051
4052 In such a situation where the applicant cannot demonstrate legal control of the site
4053 prior to site location approval (e.g., the situations described in items 2 and 3 above),
4054 the Division may issue a conditional site location approval that requires the applicant
4055 to obtain the ROWs and submit the associated documentation to the Division prior to
4056 the Division issuing design approval or acceptance of the certification. In such a case,
4057 the Division will not issue design approval acceptance of the certification until all
4058 documentation (that demonstrates that the applicant currently has full legal control of
4059 the site) has been received and reviewed by the Division.

4060
4061 For phased projects, the conditional site location approval would require that the ROWs
4062 (pertinent for the entire project) be obtained, and that the associated documentation be
4063 submitted to the Division prior to the Division issuing design approval or acceptance of the
4064 certification for the first phase of the project. In such a case, the Division will not issue
4065 design approval or acceptance of the certification until all documentation (that demonstrates
4066 that the applicant currently has full legal control of the site) for each phase has been
4067 received and reviewed by the Division. Under extenuating circumstances, where an
4068 interceptor sewer requires extended property and easement negotiations with multiple
4069 parties, the Division may consider a request for phased self-certifications. If allowed, the
4070 Division must condition the site location approval so that the applicant provides multiple,
4071 phased self-certification final plans and specification forms with proof of ownership prior to
4072 commencement of construction for that phase.

4073
4074 **22.8(3)(b)(iv) Identification of the Treatment Entity**

4075 The treatment entity responsible for receiving and treating the wastewater from the
4076 interceptor sewer is the owner and operator of the treatment works to which the wastewater
4077 will be conveyed. The engineering report shall identify the treatment entity responsible for

4078 receiving and treating the domestic wastewater, as well as identify any intermediary
4079 municipality that owns or operates infrastructure used to convey the wastewater to the final
4080 treatment works. Additionally, the engineering report shall include a confirmation, in writing,
4081 from the treatment entity that owns and operates the treatment works receiving the
4082 domestic wastewater and any intermediary conveyors that 100 percent of the wastewater
4083 from the interceptor will be accepted and treated. This confirmation must be in the form of
4084 written correspondence or the Wastewater Receiving Entity Certification form included as
4085 part of the site location application, and cannot be prepared or completed by another person
4086 on behalf of the treatment entity or intermediary conveyance municipality. The
4087 confirmation(s) shall include the following:

- 4088
- 4089 A. Statement from the treatment entity and any intermediary conveyance municipality
4090 that they will accept, convey, and/or treat the wastewater from the interceptor at
4091 the maximum month, peak hour, and peak instantaneous flow rates stated in the
4092 application;
 - 4093 B. Statement that the treatment entity and any intermediary conveyance municipality is
4094 not presently receiving wastes in excess of its design capacity as defined in its site
4095 location approval and/or discharge permit. Otherwise, the treatment entity and
4096 municipality must indicate they are under construction, or will be in a phased
4097 construction of new or expanded treatment works, and will have the necessary
4098 capacity to treat the projected discharge from the new or expanded interceptor.
4099 Projections of flow and loading to the treatment works over the period during which
4100 build out of the service area will occur or 20 years, whichever is less, as well as
4101 current and future treatment works capacity information must be provided to
4102 demonstrate the plan for maintaining adequate treatment and conveyance capacity.
4103 Any proposed treatment works phased construction must be shown in the 208 Plan, or
4104 by appropriate planning and engineering studies;
 - 4105 C. Statement that the treatment entity has not been in violation of any effluent
4106 limitations in its discharge permit for the last two (2) years and is not operating under
4107 a Notice of Violation and/or Cease and Desist Order from the Division resulting from
4108 discharge permit violations. Alternatively, if there have been effluent violations or if
4109 the treatment plant is operating under a Notice of Violation and/or Cease and Desist
4110 Order from the Division, then the Division will evaluate the situation and the
4111 treatment entity's proposed corrective measures to achieve consistent compliance and
4112 determine if approval should be granted, granted with conditions, or denied. To
4113 facilitate the review process, the Division expects the entity to provide an update of
4114 all corrective actions that have been completed, or are in process, to return to
4115 compliance.

4116

4117 If the applicant is aware of commercial or industrial (or other high-strength or difficult-to-
4118 treat) pollutants that may be discharged to the receiving entity via the interceptor, the
4119 applicant must notify the receiving treatment entity, in writing, prior to the receiving
4120 treatment entity issuing written certification to accept and treat the domestic wastewater. A
4121 copy of this notification must be included in the site location application submittal.

4122

4123 **22.8(3)(b)(v) 208 Designated Planning and Management Agency(ies) Confirmation(s)**

4124 The site location application for a new treatment works is associated with a specific service
4125 area as required to be defined in the engineering report in accordance with Section
4126 22.8(3)(b)(i) of Regulation 22. As part of the site location application, the applicant must
4127 demonstrate that the proposed service area conforms with the approved 208 plan and/or the
4128 local long-range comprehensive plan. In some cases, the applicant may need to request a
4129 revision of the 208 plan and/or the local long-range comprehensive plan prior to submitting a
4130 site location application to the Division. The 208 designated planning and management
4131 agency(ies) must confirm, in writing, that the proposed interceptor sewer has the capacity to
4132 carry the projected flow and is consistent with the regional water quality management plan.

4133

4134 The applicant must demonstrate that the proposed service area and population projections
4135 are consistent with an approved 208 plan for the planning region and/or the local long-range
4136 comprehensive plan. To demonstrate consistency with these approved plans, the site location
4137 application must address the information identified in Sections 22.3(1)(a), 22.5(1)(j), and
4138 22.5(1)(k) of this policy and in accordance with the respective sections of Regulation 22.

4139

4140 For ease of review, the site location application engineering report must include applicable
4141 portions of approved plans that have been referenced.

4142

4143 **22.8(3)(b)(vi) Implementation Schedule**

4144 The engineering report must include an implementation schedule for the proposed treatment
4145 works. The schedule shall be presented in the form of a timeline or Gantt chart with a
4146 written narrative discussing critical milestones to meet the proposed start-up date (month
4147 and year). At a minimum, the schedule shall include the estimated time to construct the
4148 proposed treatment works from the commencement of construction to start-up, any staging
4149 or phasing, and the projected start-up date. Additional information, such as projected site
4150 location approval, design review submittal, design approval, and bid award dates can assist
4151 the Division in visualizing the applicant's overall schedule.

4152

4153 **22.8(3)(b)(vii) Financial Capacity**

4154 The financial system associated with construction, operating, and maintaining the proposed
4155 treatment works must include evidence of sufficient financial resources to construct the
4156 facility, as well as a financial plan to generate revenue sufficient to repay any indebtedness
4157 and cover ongoing operational expenses.

4158

4159 **Funding for Privately Owned Treatment Works and Developers**

4160 If the applicant intends to finance the project independently, evidence of such financial
4161 capability in the form of written communication from a financial institution attesting to the
4162 applicant's possession of adequate capital to undertake the proposed project must be
4163 included with the engineering report. In the event that the applicant requires a loan to
4164 complete the project, the engineering report must include a letter from a financial

4165 institution, bond advisor, or other loan program indicating its intent to make such a loan for
4166 the purpose of constructing the proposed treatment works.

4167

4168 Funding for Municipal Treatment Works

4169 For municipal or publicly financed treatment works, the applicant must address capital
4170 construction capabilities by demonstrating available cash resources through including copies
4171 of current budget documents with the engineering report. If the applicant intends to finance
4172 the project using loan and grant funds, the engineering report must include documentation
4173 from any provider agreeing to issue loans and/or grants for the proposed project including the
4174 SRF program. If the applicant intends to fund the project using bonds, the engineering report
4175 must include a copy of the report from a bond advisor or intended bond underwriter.

4176

4177 Applicants using Borrowed Funds to Finance the Treatment Works

4178 All applicants relying on borrowed funds must develop and present a financial plan for
4179 repaying the borrowed funds, along with any fees and interest associated with the
4180 transaction. The plan must address the full term of the payback period and not just
4181 demonstrate a pattern of anticipated revenue generation. If applicable, the financial plan
4182 must also identify a fee structure for the retirement of capital costs associated with the
4183 proposed project, as well as any process expansions or equipment/structure replacements
4184 funds required within the planning period. The fee structure must include system
4185 development fees and monthly user fees. Public municipalities may satisfy these
4186 requirements by providing the current fee structure, rate studies, and fee ordinance that
4187 demonstrates procedures for rate and fee adjustments and relevant budget documents.

4188

4189 Ultimately, the engineering report must include a financial system that outlines how the
4190 applicant can provide the necessary funds for construction, operation, maintenance, and
4191 capital projects for the life of the project. The financial system must provide sufficient
4192 information to show that the treatment entity that oversees the proposed treatment works
4193 has adequate financial capacity over a 20-year period or some other clearly defined future
4194 planning period. In addition to the long-range financial plan, the Division expects the
4195 engineering report to include a projected 5-year budget, including annual costs and revenues,
4196 rate and fee structures, reserve funds (i.e., emergency replacements), and operating
4197 expenses. At a minimum, the financial system must include a discussion of the following
4198 items:

4199

- 4200 1. Itemization of projected expenses and revenues including such costs as equipment
4201 O&M and required sampling;
- 4202 2. Comparison of all anticipated wastewater revenues and planned expenditures for a 20-
4203 year period or some other clearly defined future planning period;
- 4204 3. Identification of reserve accounts for emergencies/replacement funding and O&M
4205 funds;
- 4206 4. Access to public and private financial capital;
- 4207 5. Revenues must be greater than costs including an operating ratio greater than 1.0
4208 (operating revenue/operating expense) and coverage ratio greater than 1.0 (total

- 4209 revenue-operating expense/debt service);
4210 6. Current outstanding debt and ability to borrow funds;
4211 7. Periodic financial audits;
4212 8. Annual development and utilization of budget;
4213 9. Rate structure based on customer, flow, and/or waste type; and
4214 10. Capital improvements plan.

4215

4216 **22.8(3)(c) through 22.8(3)(e) Submittal of Application for Agency Reviews**

4217 Regulation 22 requires the applicant to provide copies of the site location application and
4218 engineering report to the review agencies prior to submission to the Division. The agencies
4219 will evaluate the site location application based on each agency's plans, policies, rules and
4220 regulations, which may include the 208 plan for the area, should such a plan exist. The
4221 applicant must perform all necessary coordination and supply all information to the agencies.
4222 The applicant is responsible for obtaining all necessary signatures on the site location
4223 application before submitting it to the Division. These agencies may include the county, city
4224 or town, local health authority, designated planning and/or management agency, and any
4225 other state or federal agency (for a list of county health agencies and 208 planning and
4226 management agencies refer to Appendix B). These agencies shall review and recommend
4227 approval or denial of the site location application to the Division.

4228

4229 Each review agency may recommend approval by simply signing and dating the site location
4230 application on the provided signature line. The agencies are welcome to provide a letter of
4231 approval to accompany the site location application, and are encouraged to include a letter
4232 citing specific concerns or if their approval hinges on specific conditions. For the agencies
4233 who are recommending denial of the site location application, in addition to signing the site
4234 location application and indicating that a denial is recommended, the agency must also
4235 provide a written statement explaining the reason(s) for recommending denial of the site
4236 location application.

4237

4238 The applicant shall provide each review agency at least 60 days to review the site location
4239 application and engineering report. The applicant may submit the site application to the
4240 Division prior to 60 days if all agencies provided comments, or after the 60 day period should
4241 any agency not provide a signature or comment letter. The Division shall contact non-
4242 responsive agencies, and provide seven (7) additional days to any agency that does not
4243 provide a signature or comment letter. Following the seven (7) days of additional time, the
4244 Division will proceed with its review of the site location application.

4245

4246 Any modification made to the site location application to address comments from any review
4247 agency shall be transmitted to each review agency. Any and all changes that are made to
4248 address comments shall be documented in the final submittal to the Division. The site
4249 location application shall further include any correspondence between the applicant and each
4250 agency.

4251

4252 **22.8(4) and 22.8(5) Modifications to a Site Location Approval Prior to Completion of**
4253 **Construction**

4254 The Division realizes that the design capacity of the interceptor sewer is strongly reliant on
4255 the interceptor being installed as designed (e.g., slope, alignment). The Division recognizes
4256 that field changes may be required due to unforeseen circumstances and that these changes
4257 may impact the design capacity of the interceptor or a slight realignment. In the case of a
4258 field change that results in a change in the design capacity, the applicant must resubmit the
4259 site location application in accordance with the applicable requirements of Section 22.8 of
4260 Regulation 22. In the case of a minor realignment, the applicant may submit information
4261 demonstrating legal control of the site as part of the as-built certification process. Major
4262 realignments must resubmit a site location application in accordance with the applicable
4263 requirements of Section 22.8 of Regulation 22.

4264 **22.9 APPLICATION PROCEDURES FOR LIFT STATIONS**

4265

4266 A site location application for *Lift Stations* is used for the following situations:

4267

- 4268 ● Proposed lift stations and their associated appurtenances (e.g., valve vaults,
4269 emergency storage structures, force mains, etc.) with a design capacity to receive
4270 greater than 2,000 gpd of domestic wastewater;
- 4271 ● Existing lift stations without site location and design approval. The application should
4272 refer to Appendix C (Historical Lift Station and Interceptor Interim Implementation)
4273 prior to submitting a site location application;
- 4274 ● Changes to an existing lift station that occur beyond the existing site location
4275 approval, such as expansion of the lift station or associated appurtenances onto an
4276 adjacent property not included as part of the original site location approval; and
- 4277 ● Construction that increases or decreases the design capacity of an existing lift station
4278 that has received prior site location approval.

4279

4280 Other modifications or replacements to a lift station (e.g., replacement/relocation of the lift
4281 station and associated appurtenances on the same site, modifications to dry/wet well, or
4282 addition of emergency storage) are addressed separately in either Section 22.10 or 22.12 of
4283 Regulation 22.

4284

4285 The Division shall review site location applications submitted for all lift stations and their
4286 appurtenances in accordance with all applicable sections of Regulation 22.

4287

4288 **22.9(1) Submittal Requirements/Expectations**

4289 The applicant shall prepare and submit the following forms and information to the Division:

4290

- 4291 ● [Fee Information Request Form](#);
- 4292 ● [Section 22.9 - Lift Station](#); and
- 4293 ● Engineering Report.

4294

4295 The site location application, including the necessary forms, shall be submitted electronically
4296 to the Division using the following email address: CDPHE.WQEngReview@state.co.us. The
4297 Division prefers one (1) complete electronic application, and may request a paper copy for all
4298 or part of the application, as required to facilitate the review process. The applicant must fill
4299 in the forms completely and accurately prior to submission to the Division. The applicant is
4300 responsible for ensuring the proposed hydraulic and organic design capacities concur with the
4301 intended final design and the flow rates designated for the lift station by the receiving
4302 treatment entity prior to submitting the application for site location approval. All information
4303 provided on the application must conform to the requirements set forth in Regulation 22 and
4304 in this policy. Additionally, for lift station projects involving a change of the site boundary of
4305 a previously approved site location, the applicant must include the previously approved site
4306 location number with the application. For a lift station project involving the increase or
4307 decrease in the design capacity of a previously approved site location, the applicant shall

4308 submit the original site location application, approval letter, and an updated site location
4309 application, and must address all the pertinent requirements of the engineering report, as
4310 defined in Section 22.9(1)(b) of Regulation 22, that will change as a result of the capacity
4311 change. If the original documents are not available, the applicant must address all the
4312 requirements of the engineering report.

4313
4314 The Division will not initiate a site location review prior to receiving appropriate fees for the
4315 proposed treatment works, and will not complete a site location decision prior to receiving all
4316 applicable signatures and providing all review agencies the allotted review times as indicated
4317 in Regulation 22, with the exception of non-responsive review agencies. The site location
4318 application shall include dated correspondence to each review agency to demonstrate that 60
4319 days was allowed for each review. The site location application must include original ink
4320 signatures, scanned copies of the original signatures, or electronic signatures from the
4321 applicant and review agencies, and comments if provided.

4322
4323 **22.9(1)(a) Availability of Submittal Forms**

4324 As identified above, the forms required for the site location and design application process
4325 are available on the Division's web page. For those applicants who do not have access to the
4326 forms electronically, paper copies can be obtained through the Division's office at 4300
4327 Cherry Creek Drive South, Denver, Colorado 80246-1530.

4328
4329 **22.9(1)(b) Engineering Report**

4330 The applicant shall prepare and submit an engineering report as part of the application
4331 process for site location approval. The engineering report shall be prepared, signed, and
4332 sealed by a State of Colorado licensed professional engineer in accordance with the *Bylaws,*
4333 *Rules and Policies of the State Board of Licensure for Architects, Professional Engineers, and*
4334 *Professional Land Surveyors* issued by DORA. Regulation 22 specifically states that the
4335 engineering report shall describe the proposed lift station. This report shall completely
4336 address the items as identified in each of the Sections 22.9(1)(b)(i) through 22.9(1)(b)(xi) of
4337 Regulation 22 and as guided by this policy. Additionally, the engineering report shall address
4338 and allow the Division to consider the issues discussed in Sections 22.3 and 22.5. Many of the
4339 items required by Sections 22.3 and 22.5 are covered by the information described within
4340 22.9(1)(b). To that extent, the applicant shall refer to Sections 22.3 and 22.5 to ensure all
4341 relevant material is addressed and included in the engineering report.

4342
4343 **22.9(1)(b)(i) Map Identifying the Site**

4344 The engineering report shall include map(s) identifying the site of the proposed treatment
4345 works, air release valve locations, topography of the area, and neighboring land uses. To
4346 facilitate processing of the site location application, the map(s) shall also show the proposed
4347 treatment works in relation to boundaries of the service area for the design life of the
4348 treatment works. The map(s) must identify any local water bodies, streams, rivers, wetlands,
4349 endangered species habitat, domestic wells, drinking water treatment intakes, potable water
4350 lines and other treatment plants. The map(s) shall be to scale to allow the Division to
4351 determine set-back distances in accordance with this policy.

4352

4353 **22.9(1)(b)(ii) Service Area, Population, and Loading Projections**

4354 The engineering report shall define the boundaries of the service area for the design life of
4355 the proposed treatment works. The service area may be expressed in a variety of ways
4356 depending on the nature of the service area. The service area definition should be supported
4357 with adequate maps, legal property boundaries and descriptions, structures served, and/or
4358 specific land use descriptions. The engineering report shall provide both narrative and visual
4359 descriptions of the service area. As part of the service area definition, the engineering report
4360 shall indicate the proposed location of the treatment works. Depicting topography, local
4361 water bodies, streams, rivers, wetlands, endangered species habitat, domestic wells, drinking
4362 water treatment plant intakes and other treatment works aids with the review of the site
4363 location application, and must also be included on the service area map(s). The map(s) shall
4364 be to scale to allow the Division to determine set-back distances in accordance with
4365 information provided in this policy.

4366

4367 For all cases, the service area must represent the 20-year planning period, or some other
4368 clearly defined future planning period. This planning period must conform to the approved
4369 208 plan and/or the local long-range comprehensive plan. The applicant shall demonstrate
4370 that the service area is consistent with the approved 208 plan and/or the local long-range
4371 comprehensive plan. For additional information pertaining to the use of local and regional
4372 water quality planning information, refer to the information presented in Sections 22.3(1)(a)
4373 and 22.5(1)(k) of this policy. To demonstrate consistency with these approved plans, the site
4374 location application must address the information identified in this policy. For ease of review,
4375 the engineering report shall include applicable portions of approved plans that have been
4376 referenced.

4377

4378 Based on the service area, the engineering report must clearly estimate the flow and loading
4379 projections to be conveyed to the proposed treatment works for the projected planning
4380 period. The flow and loading projections must include average daily flow, maximum month
4381 average daily flow, peak hour flow (or instantaneous flow value based on the service area),
4382 and the associated organic loads, and must be developed using the design service area
4383 population, land use, and unique customer information. Once the contributing wastewater
4384 flows are established, the applicant must take into account that the design capacity for a lift
4385 station, as defined by Section 22.2(8)(c) of Regulation 22, is expressed as the firm pump
4386 capacity (i.e., capacity with the largest unit out of service).

4387

4388 **Population/Land Use Projections**

4389 The engineering report shall develop flow and loading estimates through population and/or
4390 land use projections.

4391

- 4392
- 4393 • **Population Projections:** Population projections are appropriate for single use service
4394 areas and well-defined residential developments that do not have significant
4395 commercial/industrial waste loads. For single use service areas, such as schools,
churches, campgrounds, etc., the population shall be expressed as the number of each

4396 population type at build out or certified occupancy. Population types for a single use
4397 treatment works may include day staff, over-night staff, visitors, etc. For well-defined
4398 residential developments/communities, the engineering report may rely on historical
4399 census data extrapolations or typical household sizes (e.g., single family equivalent
4400 (SFE) = 3.2 persons, multi-family equivalent (MFE) = 2.1 person, etc.) and household
4401 types (zoned R-1, R-2, MFE, etc.) to estimate service area populations. All information
4402 used to develop population estimates must be well documented in the engineering
4403 report.

- 4404 ● Land Use Projections: Land use projections are appropriate for significant service
4405 areas with a variety of land uses. Typically, local planning documents use a
4406 combination of open space, floor area ratio, and zoning types to define development
4407 within a service area. The engineering report shall subdivide the service area into land
4408 use types, such as open space, commercial, residential (SFE, R2, MF, etc.), and
4409 translate this information into residential populations, industrial/commercial land use
4410 areas, or building square footages to determine appropriate loading estimates.

4411
4412 Note, general land use estimates may not be considered adequate for special circumstances
4413 (food processing facilities or computer chip manufacturing) in a small community. These
4414 industries may exceed typical average waste loading values used for planning. The
4415 engineering report must deal with these unique circumstances on a case-by-case basis.

4416
4417 Flow/Loading Projections

4418 Average Daily Flow: Following the development of population or land use projections, the
4419 engineering report shall develop an average daily flow for the service area over the defined
4420 planning period. When using historical data as the basis, the applicant shall use at least three
4421 (3) relevant years of matched population/land use and flow data. Potable water use data may
4422 be representative of wastewater flow with appropriate adjustments such as subtraction of
4423 outside irrigation water use. If historical data is not available, the engineering report shall
4424 use locally approved planning values for developing wastewater flows for each type of
4425 population/land use. If an approved comprehensive or master plan is not available, the
4426 engineering report shall justify planning values for wastewater flows for each type of
4427 population/land use. For single use service areas, the engineering report shall develop the
4428 average daily flow using: 1) at least three (3) years of representative, matched daily
4429 population and flow data, if available, 2) planning values for flow provided in Regulation 43
4430 (or successor), or 3) other applicable and widely accepted planning or engineering reference
4431 manuals. The engineering report shall include documentation of all references.

4432
4433 Maximum Month Average Daily Flow: After establishing the average daily flow, the
4434 engineering report shall develop the maximum month average daily flow. For single use
4435 facilities, the maximum month average daily flow is at full occupancy. For sites with
4436 significant fluctuations in daily flow, maximum month average daily flow must consider days
4437 with reasonable flow and not minimalist days (e.g., school with 22 days attendance divides
4438 monthly flow by 22 days, not 30 days). Some small-scale examples of maximum month
4439 average daily flow at full occupancy include:

4440

4441 ● A small motel with 24 rooms. Planning values in Regulation 43 would indicate flow of
4442 2,400 gpd (24 rooms, 2 per room, 50 gpcd). Evaluation of existing data with matched
4443 population might show average daily flow is 33 gpcd in January and 38 gpcd in August.
4444 Using the maximum month average daily flow (i.e., 38 gpcd in August) and pairing with
4445 full occupancy, the maximum month average daily flow at full occupancy would be
4446 1,824 gpd (48 people, 38 gpcd).

4447 ● A rural school with 100 students and 20 staff. Planning values in Regulation 43 would
4448 indicate flow of 2,300 gpd (100 students at 20 gpcd with cafeteria but no gym or
4449 showers, 20 staff at 15 gpcd). Evaluation of existing data with matched population
4450 might show average daily flow is 14 gpcd in February and 16 gpcd in October including
4451 students and staff. Using the maximum month average daily flow (i.e., 16 gpcd in
4452 October) and pairing with full occupancy, the maximum month average daily flow at
4453 full occupancy would be 1,920 gpd (120 people, 16 gpcd).

4454

4455 For all other treatment works, the maximum month average daily flow must be tied to a
4456 special event, I&I, commercial and industrial contributions, a seasonal change in water use
4457 for a specific service area, or other justifiable and documented event. Due to the potential
4458 variability, this estimate shall be made using at least three (3) years of historic records. If
4459 historic records are unavailable, the engineering report shall document the basis for the
4460 proposed maximum month peaking factor. When the maximum flow stems from I&I estimates,
4461 the engineering report shall estimate I&I based on a percentage of the average daily flow.
4462 This seasonal flow should be added to the average daily flow as a non-peaked base flow to the
4463 proposed treatment works influent. Unsupported I&I estimates should be a minimum of 10
4464 percent of the average daily flow. The engineering report shall include documentation of all
4465 references.

4466

4467 Peak Hour Flow: The engineering report shall build from the average daily flow estimate to
4468 develop a peak hour design flow or other justified design peak, if deemed necessary based on
4469 the service area. For example, a treatment works providing service only to a sports stadium
4470 may need to accommodate the peak flow from all fixture units operating simultaneously. The
4471 engineering report shall develop either a single composite peaking factor for all types of
4472 population/land uses or individual peaking factors for each type of population/land use. The
4473 peaking factors should be developed from at least three (3) years of historical data. If
4474 historical data is not available, the design shall rely on locally approved peaking factors or
4475 industry accepted peaking factor formulas. The engineering report shall include
4476 documentation of all references.

4477

4478 Organic Loading: With the projected service area flows established, the engineering report
4479 shall estimate the organic loading to the proposed treatment works. The engineering report
4480 must consider historical organic loading, special users (commercial, industrial, etc.), typical
4481 domestic organic loads, and local planning requirements. The engineering report shall
4482 evaluate at least three (3) years of historical data. If not available, the engineering report
4483 shall justify the organic loading to the proposed treatment works through an analysis of

4484 individual user types and their anticipated organic loading. For single use facilities, where
4485 historical data is unavailable, the engineering report shall rely on the planning values
4486 provided in Regulation 43 (or successor) or other applicable and widely accepted planning or
4487 engineering references. The engineering report shall include documentation of all references.
4488

4489 Staging or Phasing

4490 Based on initial flows and loads, sometimes the proposed treatment works cannot function
4491 effectively especially when designed for the long-range planning associated with the service
4492 area. In this case, the applicant shall develop an operational plan, and this plan shall be
4493 included as part of the site location application rather than during the design review phase.
4494 The operational plan must clearly identify measurable and definitive guidelines for
4495 constraining conditions. Please refer to section 22.13 in this policy for specific information.
4496

4497 22.9(1)(b)(iii) Identification of the Treatment Entity

4498 The treatment entity responsible for receiving and treating the wastewater from the lift
4499 station is the owner and operator of the treatment works to which the wastewater will be
4500 conveyed. The engineering report shall identify the treatment entity responsible for receiving
4501 and treating the domestic wastewater, as well as identify any intermediary municipality that
4502 owns or operates infrastructure used to convey the wastewater to the final treatment works.
4503

4504 22.9(1)(b)(iv) Legal Arrangements Showing Control of the Site

4505 The applicant shall provide sufficient information in the engineering report to demonstrate
4506 that all proposed components of the treatment works exist within the legal boundaries of the
4507 proposed site. The applicant has a number of options to demonstrate control of the site for
4508 the life of the project depending on the control mechanism.
4509

4510 Control of the Site through Ownership

4511 The applicant may demonstrate control of the site through ownership by providing a copy of
4512 the deed or title to the property in the name of the applicant. The Division will accept a copy
4513 of the title insurance, but the applicant must ensure that the title insurance document does
4514 not contain errors regarding ownership, property description, or limitations or restrictions
4515 that would preclude using the property for its intended purpose prior to submitting the
4516 information to the Division. The site location application must disclose and address any
4517 limitations that potentially impact the applicant's ability to maintain, operate, or construct
4518 facilities within the proposed site location for the life of the project.
4519

4520 Control of the Site through Use of Public Right of Ways

4521 In cases where the site location for the proposed treatment works utilizes public right of ways
4522 (ROWs) (e.g., municipal transportation or utility ROWs), the applicant is not required to
4523 demonstrate legal control of the site. However, the engineering report shall provide a map
4524 identifying the boundaries of the site location for the proposed treatment works in
4525 relationship to the public ROWs.
4526
4527

4528 Control of the Site through Use of Right of Ways Across Private Property

4529 Alternatively, the applicant may demonstrate legal control of the site through use of a ROW
4530 across private property. Specific expectations with regard to information for these types of
4531 ROWs (e.g., easements via purchase, lease or condemnation, etc.) and the site location
4532 application are as follows:

4533

4534 1. To facilitate as timely a review process as possible, all ROWs that are necessary for
4535 the project shall be obtained prior to submittal of the site location application, and
4536 copies of the documentation for all ROWs shall be included in the submittal.

4537 2. Where all ROWs could not be obtained by the time of site location application, at a
4538 minimum, the applicant must identify all ROWs that will be needed for the project,
4539 and an explanation of how they intend to obtain each of the ROWs.

4540

4541 a. For ROWs that do not involve condemnation, signed copies of agreements
4542 concerning the intent to sell/lease between the applicant and land owners (for
4543 which easements are needed) may be submitted to fulfill the legal control
4544 requirement during the site location phase of the project. The copies of
4545 agreements must clearly indicate the terms and conditions of the lease or legal
4546 easement specific to the duration of the agreement in addition to access,
4547 construction, and maintenance of any treatment works located within the
4548 proposed site location for the duration of the agreement.

4549

4550 3. If prior to submittal and by the time that the site location application is submitted:

4551

4552 a. The applicant, which does not require ROWs for the project that involve
4553 condemnation, cannot obtain a signed agreement between the applicant and
4554 each landowner regarding the intent to sell/lease the land; or

4555 b. The applicant, which requires ROWs for the project that involve condemnation,
4556 cannot demonstrate legal control of the site, because the condemnation
4557 process has not been completed.

4558

4559 In such a situation where the applicant cannot demonstrate legal control of the site
4560 prior to site location approval (e.g., the situations described in items 2 and 3 above),
4561 the Division may issue a conditional site location approval that requires the applicant
4562 to obtain the ROWs and submit the associated documentation to the Division prior to
4563 the Division issuing design approval. In such a case, the Division will not issue design
4564 approval until all documentation (that demonstrates that the applicant currently has
4565 full legal control of the site) has been received and reviewed by the Division.

4566

4567 For phased projects, the conditional site location approval would require that the ROWs
4568 (pertinent for the entire project) be obtained, and that the associated documentation be
4569 submitted to the Division prior to the Division issuing design approval for the first phase of the
4570 project. In such a case, the Division will not issue design approval until all documentation

4571 (that demonstrates that the applicant currently has full legal control of the site) for each
4572 phase has been received and reviewed by the Division.

4573

4574 **22.9(1)(b)(v) Wastewater Treatment Entity Statement**

4575 The engineering report shall include a confirmation, in writing, from the treatment entity
4576 that owns and operates the treatment works receiving the domestic wastewater and any
4577 intermediary conveyors (as identified in Section 22.9(1)(b)(iii) above) that 100 percent of the
4578 wastewater from the lift station will be accepted and treated. This confirmation must be in
4579 the form of written correspondence or the Wastewater Receiving Entity Certification form
4580 included as part of the site location application, and cannot be prepared or completed by
4581 another person on behalf of the treatment entity or intermediary conveyance municipality.
4582 The confirmation(s) shall include the following:

4583

- 4584 A. Statement from the treatment entity and any intermediary conveyance municipality
4585 that they will accept, convey, and/or treat the wastewater from the lift station at the
4586 maximum month, peak hour, and peak instantaneous flow rates stated in the site
4587 location application;
- 4588 B. Statement that the treatment entity and any intermediary conveyance municipality is
4589 not presently receiving wastes in excess of its design capacity as defined in its site
4590 location approval and/or discharge permit. Otherwise, the treatment entity and
4591 municipality must indicate they are under construction, or will be in a phased
4592 construction of new or expanded treatment works, and will have the necessary
4593 capacity to treat the projected discharge from the new or expanded lift station.
4594 Projections of flow and loading to the treatment works over the period during which
4595 build out of the service area will occur or 20 years, whichever is less, as well as
4596 current and future treatment works capacity information must be provided to
4597 demonstrate the plan for maintaining adequate treatment and conveyance capacity.
4598 Any proposed treatment works phased construction must be shown in the 208 Plan, or
4599 by appropriate planning and engineering studies;
- 4600 C. Statement that the treatment entity has not been in violation of any effluent
4601 limitations in its discharge permit for the last two (2) years and is not operating under
4602 a Notice of Violation and/or Cease and Desist Order from the Division resulting from
4603 discharge permit violations. Alternatively, if there have been effluent violations or if
4604 the treatment plant is operating under a Notice of Violation and/or Cease and Desist
4605 Order from the Division, then the Division will evaluate the situation and the
4606 treatment entity's proposed corrective measures to achieve consistent compliance,
4607 and determine if approval should be granted, granted with conditions, or denied. To
4608 facilitate the review process, the Division expects the treatment entity to provide an
4609 update of all corrective actions that have been completed, or are in process, to return
4610 to compliance.

4611

4612 If the applicant is aware of commercial or industrial (or other high-strength or difficult-to-
4613 treat) pollutants that may be discharged to the receiving treatment entity via the lift station,
4614 the applicant must notify the receiving treatment entity, in writing, prior to the receiving

4615 treatment entity issuing written certification to accept and treat the domestic wastewater. A
4616 copy of this notification must be included in the site location application submittal.

4617

4618 **22.9(1)(b)(vi) Operation and Maintenance**

4619 While Regulation 22 indicates that the applicant shall demonstrate the Owner's capability to
4620 operate and maintain the treatment works, the Division finds that Section 22.9(1)(b)(vi) in
4621 conjunction with Section (1)(b)(ix) is meant to focus on emergency operations. The applicant
4622 shall address O&M requirements and manuals during the design review process, and not more
4623 than required by this section of the policy. The engineering report must include an emergency
4624 operations plan, and the plan shall be an overview of the proposed emergency management
4625 tools, facilities, programs, and equipment. While the design criteria addresses specific
4626 requirements for treatment works that must be incorporated into the design, the engineering
4627 report is meant to be a model for applying the required emergency systems to prevent
4628 potential sanitary sewer overflows of partially treated or raw wastewater or spills from
4629 unpermitted point sources. At a minimum, the engineering report must include an emergency
4630 operations plan that discusses the following issues:

4631

- 4632 ● The requirements of design criteria for the proposed treatment works;
- 4633 ● Special practices and local requirements for sensitive site locations;
- 4634 ● Telemetry and alarms;
- 4635 ● Standby power source identification;
- 4636 ● Equipment powered by the standby power source;
- 4637 ● Portable emergency pumping equipment;
- 4638 ● Emergency overflow storage sizing; and
- 4639 ● An operator call-down list and emergency response time justification.

4640

4641 The discussion shall justify the ability of the proposed treatment works to mitigate the
4642 potential hazards of a sanitary sewer overflow through appropriate management, equipment,
4643 and operational programs.

4644

4645 Please note that site location approval that includes an emergency operations plan, does not
4646 constitute approval of the plan during the design review process. The Division shall evaluate
4647 the plan during the design approval phase with respect to any new information provided and
4648 the requirements of the design criteria. If the proposed plan presented with the site location
4649 application varies from the requirements of the design criteria, then the design review
4650 submittal (i.e., PDR or BDR) shall include an updated emergency operations plan to meet the
4651 design criteria requirements. If the proposed emergency operations plan can be shown to be
4652 equivalent benefit to the design criteria requirements, the design review submittal may
4653 include a site-specific deviation request in accordance with Section 1.7.0 of the design
4654 criteria.

4655

4656 **22.9(1)(b)(vii) Management Capabilities**

4657 Management capabilities refer to the applicant's ability to control the waste constituent and
4658 hydraulic loading to the proposed treatment works and ultimately to the associated

4659 treatment plant. If the agreement between the applicant and the receiving treatment entity
4660 requires that the applicant or person responsible for operation of the treatment works control
4661 the waste through a legally enforceable means (i.e., user contracts, ordinances, operating
4662 agreements, pretreatment requirements, etc.), the engineering report shall specifically
4663 discuss these issues, and include copies of any contracts or agreements.

4664

4665 **22.9(1)(b)(viii) Financial System**

4666 The financial system associated with construction, operating, and maintaining the proposed
4667 treatment works must include evidence of sufficient financial resources to construct the
4668 facility, as well as a financial plan to generate revenue sufficient to repay any indebtedness
4669 and cover ongoing operational expenses.

4670

4671 **Funding for Privately Owned Treatment Works and Developers**

4672 If the applicant intends to finance the project independently, evidence of such financial
4673 capability in the form of written communication from a financial institution attesting to the
4674 applicant's possession of adequate capital to undertake the proposed project must be
4675 included with the engineering report. In the event that the applicant requires a loan to
4676 complete the project, the engineering report must include a letter from a financial
4677 institution, bond advisor, or other loan program indicating its intent to make such a loan for
4678 the purpose of constructing the proposed treatment works.

4679

4680 **Funding for Municipal Treatment Works**

4681 For municipal or publicly financed treatment works, the applicant must address capital
4682 construction capabilities by demonstrating available cash resources through including copies
4683 of current budget documents with the engineering report. If the applicant intends to finance
4684 the project using loan and grant funds, the engineering report must include documentation
4685 from any provider agreeing to issue loans and/or grants for the proposed project including the
4686 SRF program. If the applicant intends to fund the project using bonds, the engineering report
4687 must include a copy of the report from a bond advisor or intended bond underwriter.

4688

4689 **Applicants using Borrowed Funds to Finance the Treatment Works**

4690 All applicants relying on borrowed funds must develop and present a financial plan for
4691 repaying the borrowed funds, along with any fees and interest associated with the
4692 transaction. The plan must address the full term of the payback period and not just
4693 demonstrate a pattern of anticipated revenue generation. If applicable, the financial plan
4694 must also identify a fee structure for the retirement of capital costs associated with the
4695 proposed project, as well as any process expansions or equipment/structure replacements
4696 funds required within the planning period. The fee structure must include system
4697 development fees and monthly user fees. Public municipalities may satisfy these
4698 requirements by providing the current fee structure, rate studies, and fee ordinance that
4699 demonstrates procedures for rate and fee adjustments and relevant budget documents.

4700

4701 Ultimately, the engineering report must include a financial system that outlines how the
4702 applicant can provide the necessary funds for construction, operation, maintenance, and

4703 capital projects for the life of the project. The financial system must provide sufficient
4704 information to show that the treatment entity that oversees the proposed treatment works
4705 has adequate financial capacity over a 20-year period or some other clearly defined future
4706 planning period. In addition to the long-range financial plan, the Division expects the
4707 engineering report to include a projected 5-year budget, including annual costs and revenues,
4708 rate and fee structures, reserve funds (i.e., emergency replacements), and operating
4709 expenses. At a minimum, the financial system must include a discussion of the following
4710 items:

- 4711
- 4712 1. Itemization of projected expenses and revenues including such costs as equipment
4713 O&M and required sampling;
 - 4714 2. Comparison of all anticipated wastewater revenues and planned expenditures for a 20-
4715 year period or some other clearly defined future planning period;
 - 4716 3. Identification of reserve accounts for emergencies/replacement funding and O&M
4717 funds;
 - 4718 4. Access to public and private financial capital;
 - 4719 5. Revenues must be greater than costs including an operating ratio greater than 1.0
4720 (operating revenue/operating expense) and coverage ratio greater than 1.0 (total
4721 revenue-operating expense/debt service);
 - 4722 6. Current outstanding debt and ability to borrow funds;
 - 4723 7. Periodic financial audits;
 - 4724 8. Annual development and utilization of budget;
 - 4725 9. Rate structure based on customer, flow, and/or waste type; and
 - 4726 10. Capital improvements plan.
- 4727

4728 **22.9(1)(b)(ix) Emergency Operations Plan**

4729 With the Division finding that Section 22.9(1)(vi) of Regulation 22 focuses on emergency
4730 operations, the engineering report shall refer to the previous section in order to address this
4731 section of Regulation 22.

4732

4733 **22.9(1)(b)(x) Implementation Schedule**

4734 The engineering report must include an implementation schedule for the proposed treatment
4735 works. The schedule shall be presented in the form of a timeline or Gantt chart with a
4736 written narrative discussing critical milestones to meet the proposed start-up date (month
4737 and year). At a minimum, the schedule shall include the estimated time to construct the
4738 proposed treatment works from the commencement of construction to start-up, any staging
4739 or phasing, and the projected start-up date. Additional information, such as projected site
4740 location approval, design review submittal, design approval, and bid award dates can assist
4741 the Division in visualizing the applicant's overall schedule.

4742

4743 **22.9(1)(b)(xi) Public Notification**

4744 To notify the public, and provide additional opportunity for public input, the posting
4745 requirements given in section 22.6(3) shall also apply to all new lift stations, which the
4746 Division interprets to include lift station projects that change the site boundary of a

4747 previously approved site location. This section of Regulation 22 requires the applicant to post
4748 a sign on the proposed site location to encourage public notification. The sign must include
4749 specific information documented in the regulation and must be formatted as specified unless
4750 local county or municipal sign codes overrule. The sign must be posted for a minimum of 15
4751 days prior to the time the site application is submitted to the Division. However, the Division
4752 should be notified of the project at the time of the posting so that necessary public
4753 information can be made available.

4754
4755 A photograph of the sign or other documentation certifying that this posting requirement has
4756 been met must be included with the site location application. The sign shall be posted at the
4757 proposed site location in a location expected to receive the largest visitation by local persons.
4758 This location may be along a roadway or at the outfall location if located along a heavily used
4759 pedestrian trail. The site location application must indicate the posting location and justify
4760 the placement. The included photograph of the sign shall provide sufficient landmark cues to
4761 field verify the location. The site location application must also indicate the initial day that
4762 the sign was posted onsite.

4763
4764 **22.9(1)(c) and 22.9(1)(d) Submittal of Application for Agency Reviews**

4765 Regulation 22 requires the applicant to provide copies of the site location application and
4766 engineering report to the review agencies prior to submission to the Division. The agencies
4767 will evaluate the site location application based on each agency's plans, policies, rules and
4768 regulations, which may include the 208 plan for the area, should such a plan exist. The
4769 applicant must perform all necessary coordination and supply all information to the agencies.
4770 The applicant is responsible for obtaining all necessary signatures on the site location
4771 application before submitting it to the Division. These agencies may include the county, city
4772 or town, local health authority, designated planning and/or management agency, and any
4773 other state or federal agency (for a list of county health agencies and 208 planning and
4774 management agencies refer to Appendix B). These agencies shall review and recommend
4775 approval or denial of the site location application to the Division.

4776
4777 Each review agency may recommend approval by simply signing and dating the site location
4778 application on the provided signature line. The agencies are welcome to provide a letter of
4779 approval to accompany the site location application, and are encouraged to include a letter
4780 citing specific concerns or if their approval hinges on specific conditions. For the agencies
4781 who are recommending denial of the site location application, in addition to signing the site
4782 location application and indicating that a denial is recommended, the agency must also
4783 provide a written statement explaining the reason(s) for recommending denial of the site
4784 location application.

4785
4786 The applicant shall provide each review agency at least 60 days to review the site location
4787 application and engineering report. The applicant may submit the site application to the
4788 Division prior to 60 days if all agencies provided comments, or after the 60 day period should
4789 any agency not provide a signature or comment letter. The Division shall contact non-
4790 responsive agencies, and provide seven (7) additional days to any agency that does not

4791 provide a signature or comment letter. Following the seven (7) days of additional time, the
4792 Division will proceed with its review of the site location application.

4793
4794 Any modification made to the site location application to address comments from any review
4795 agency shall be transmitted to each review agency. Any and all changes that are made to
4796 address comments shall be documented in the final submittal to the Division. The site
4797 location application shall further include any correspondence between the applicant and each
4798 agency.

4799
4800 Additionally, if the applicant finds that change impacting the design capacity is required
4801 following the issuance of the site location approval, the applicant must notify the review
4802 agencies in accordance with Section 22.4(14) of Regulation 22.

4803
4804 **22.9(1)(e) Consistency with Regional Water Quality Management Plan**

4805 The site location application for a new treatment works is associated with a specific service
4806 area as required to be defined in the engineering report in accordance with Section
4807 22.9(1)(b)(ii) of Regulation 22. As part of the site location application, the applicant must
4808 demonstrate that the proposed service area conforms with the approved 208 plan and/or the
4809 local long-range comprehensive plan. In some cases, the applicant may need to request a
4810 revision of the 208 plan and/or the local long-range comprehensive plan prior to submitting a
4811 site location application to the Division.

4812
4813 The applicant must demonstrate that the proposed service area and population projections
4814 are consistent with an approved 208 plan for the planning region and/or the local long-range
4815 comprehensive plan. To demonstrate consistency with these approved plans, the site location
4816 application must address the information identified in Sections 22.3(1)(a), 22.5(1)(j), and
4817 22.5(1)(k) of this policy and in accordance with the respective sections of Regulation 22.

4818
4819 For ease of review, the site location application engineering report must include applicable
4820 portions of approved plans that have been referenced.

4821 **22.10 APPLICATION PROCEDURES FOR AMENDMENT OF EXISTING SITE LOCATION**
4822 **APPROVAL**

4823
4824 A site location application for *Amendment of an Existing Site Location Approval* is used for
4825 the following situations:

- 4826
- 4827 ● Proposed physical changes to any of the following treatment processes as long as they
4828 are not associated with an increase or decrease in design capacity:
4829
 - 4830 ○ A change in type of disinfection to include chlorine gas or from other types of
4831 disinfection to chlorination;
 - 4832 ○ A change in disinfection type (e.g., from gas chlorination to liquid chlorination,
4833 from any form of chlorination to ultraviolet light (UV) disinfection, bromine
4834 chloride, chlorine dioxide, peracetic acid, or other accepted disinfection
4835 chemicals);
 - 4836 ○ Changes or additions to the liquid stream treatment processes (e.g., sizing,
4837 technology, configuration, or recycle stream associated with preliminary,
4838 primary, secondary, or tertiary treatment) that could impact hydraulic,
4839 pollutant(s), or solids loadings to the treatment process; and
 - 4840 ○ Changes or additions to the unit processes in the solids stream treatment
4841 processes (e.g., aerobic or anaerobic digestion, dewatering, composting, etc.)
4842 that would change the characteristics of the recycle stream or biosolids.
 - 4843
 - 4844 ● A requested decrease or increase in the approved rated hydraulic and/or organic
4845 capacity of the treatment works, as long as no construction takes place, or a change in
4846 the design flow portioning that does not change the design capacity. The Division
4847 refers to these types of projects as ‘paper re-ratings’. Note, if construction is required
4848 to increase or decrease the design capacity of the treatment works or if the project is
4849 being performed to derate the capacity of the treatment works to 2,000 gpd or less
4850 regardless of whether construction will take place, the applicant must submit the
4851 project through Section 22.7 of Regulation 22;
 - 4852 ● The addition or expansion of a treatment process to generate or store reclaimed
4853 domestic wastewater (or reclaimed water as defined in Regulation 84), where the
4854 treatment process will be added downstream of secondary treatment at an existing
4855 treatment plant. Also, this section covers changes to the type of reclaimed water
4856 discharge employed, which includes treatment changes to achieve more restrictive
4857 reclaimed water categories and standards (e.g., from a Category 1 use to a Category 2
4858 use or from a localized system to a centralized system). Note, an amendment of an
4859 existing site location approval, or for that matter, site location approval in general is
4860 not required for adding reuse sites (or users) or approved uses, as long as they meet
4861 the same categorical requirements;
 - 4862 ● Changes in the type of discharge employed, where there is no change in the treatment
4863 process;
 - 4864

- 4865 ○ From surface water discharge to groundwater discharge or vice-versa at the
- 4866 same site location (i.e., within the site boundaries of the existing site location
- 4867 approval); and,
- 4868 ○ A partial or complete change from a surface water or groundwater discharge to
- 4869 reclaimed water use subject to the requirements of Regulation 84. Note, site
- 4870 location and design approval is only required for the first instance when the
- 4871 reclaimed water use is implemented, and future site location approvals are not
- 4872 required for adding reuse sites (or users) or approved uses, as long as they
- 4873 meet the same categorical requirements. However, if there is a subsequent
- 4874 request to change reclaimed categories and standards (e.g., from a Category 1
- 4875 use to a Category 2 use or from a localized system to a centralized system),
- 4876 then the treatment entity will be required to submit an application for
- 4877 amendment of an existing site location approval.
- 4878

- 4879 ● Additions or modifications to the following lift station appurtenances, as long as they
- 4880 are not associated with an increase or decrease in design capacity:
- 4881
- 4882 ○ Odor control treatment;
- 4883 ○ Emergency storage or wetwell capacity;
- 4884 ○ Grinding/screening equipment;
- 4885 ○ Back-up power (generator); and
- 4886 ○ Any rehabilitation or replacement not meeting the definition of in-kind
- 4887 replacement due to facility age, or for operational improvements including
- 4888 inlet piping or associated force main(s).
- 4889

4890 Note, as a clarification to Section 22.10(3)(f) of Regulation 22, standard O&M activities

4891 are exempt from the requirement to submit a site location application, while projects

4892 considered to meet the definition of in-kind replacement shall submit an application in

4893 accordance with Section 22.12;

- 4894 ● Other types of projects or changes to treatment works that may (as determined by the
- 4895 Division) be handled by amendment (i.e., only applicable with prior site location
- 4896 approval or confirmed construction prior to November 1967 with no subsequent
- 4897 changes):
- 4898
- 4899 ○ Requests for extension of a prior site location approval where no physical
- 4900 construction has taken place and the time elapsed since the original expiration
- 4901 date is greater than twelve (12) months, but does not exceed thirty-six (36)
- 4902 months for lift stations and interceptors or eighteen (18) months for treatment
- 4903 plants (where the Division has confirmed that the original WQPTs are still
- 4904 appropriate);
- 4905 ○ Temporary changes in service area or loadings to the treatment works; and
- 4906 ○ Certain requests for installation of temporary treatment processes (i.e.,
- 4907 requests to install interim treatment processes for a limited period of time -
- 4908 rare circumstances).

- 4909
- 4910
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- 4921
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- 4923
- Projects that entail physical changes to the treatment works (including appurtenances) that are similar in scope to those specifically listed in 22.10(2)(b)(i) through 22.10(2)(b)(iv), but are not precisely covered:
 - The applicant must submit to the Division an analysis from a Colorado-licensed professional engineer, a description of the proposed changes, and an evaluation of how the changes would affect the performance of the other parts of the treatment works, downstream treatment works and effluent quality; and
 - The Division will evaluate the proposed process change and will provide a written decision to the applicant and engineer, stating that the changes may be made without amending the previous site location approval and without obtaining design approval, or requiring that the applicant obtain site location and design approval for the proposed change.

4924 **22.10(1) Submittal Requirements/Expectations**

4925 In general, amending an existing site location approval is a much simpler and abbreviated
4926 process as compared to obtaining site location approval for a new or capacity-modified
4927 treatment works. With that said, the applicant shall prepare and submit the following forms
4928 and information to the Division:

- 4929
- 4930
- 4931
- 4932
- 4933
- 4934
- 4935
- [Fee Information Request Form](#);
 - Domestic Water Quality Planning Target/PEL Application Form;
 - [Section 22.10 - Amendment of Existing Treatment Plant Site Location Approval](#);
 - [Section 22.10 - Amendment of Existing Lift Station Site Location Approval](#); and
 - Engineering Report.

4936 The site location application, including the necessary forms, shall be submitted electronically
4937 to the Division using the following email address: CDPHE.WQEngReview@state.co.us. The
4938 Division prefers one (1) complete electronic application, and may request a paper copy for all
4939 or part of the application, as required, to facilitate the review process. The applicant must
4940 fill in the forms completely and accurately prior to submission to the Division. The applicant
4941 is responsible for ensuring the existing and/or proposed hydraulic and organic design
4942 capacities concur with the WQPTs and intended final design and permitted flow rates prior to
4943 submitting the application for site location approval. All information provided on the
4944 application must conform to the requirements set forth in Regulation 22 and in this policy.

4945

4946 The Division will not initiate a site location review prior to receiving appropriate fees for the
4947 proposed treatment works, and will not complete a site location decision prior to providing all
4948 review agencies the allotted review times as indicated in Regulation 22. The site location
4949 application shall include dated correspondence to each review agency to demonstrate that 15
4950 days was allowed for each review.

4951

4952 **22.10(1)(a) Availability of Submittal Forms**

4953 As identified above, the forms required for the site location and design application process
4954 are available on the Division’s web page. For those applicants who do not have access to the
4955 forms electronically, paper copies can be obtained through the Division’s office at 4300
4956 Cherry Creek Drive South, Denver, Colorado 80246-1530.

4957

4958 **22.10(1)(b) Evaluated Need for Permit Modification or Request for Chemical Evaluation**
4959 **Form**

4960 Prior to submitting a site location application to the Division for review, the applicant shall
4961 submit the *Domestic Water Quality Planning Target/PEL Application Form* (also replaces the
4962 use of the Chemical Evaluation Form) to the Permits Section to determine whether the
4963 existing permit, permit modification, or new permit can serve as the WQPTs for the proposed
4964 project. The applicant shall include a copy of the determination from the Permits Section in
4965 the engineering report. There are cases where an applicant may not be required to obtain a
4966 determination of WQPTs (e.g., adding grit removal to a headworks building, adding a
4967 secondary clarifier for redundancy, installing a biosolids composting process). Therefore, the
4968 applicant should consult the Division during the planning stages of the project to determine
4969 the applicability of WQPTs.

4970

4971 **22.10(1)(c) Engineering Report**

4972 The applicant shall prepare and submit an engineering report as part of the application
4973 process for site location approval. The engineering report shall be prepared, signed, and
4974 sealed by a State of Colorado licensed professional engineer in accordance with the *Bylaws,*
4975 *Rules and Policies of the State Board of Licensure for Architects, Professional Engineers, and*
4976 *Professional Land Surveyors* issued by DORA. Regulation 22 specifically states that the
4977 engineering report shall describe the proposed project. This report shall completely address
4978 the items as identified in each of the Sections 22.10(1)(c)(i) through 22.10(1)(c)(xv) of
4979 Regulation 22 and as guided by this policy. Additionally, the engineering report shall address
4980 and allow the Division to consider the issues discussed in Sections 22.3 and 22.5. Many of the
4981 items required by Sections 22.3 and 22.5 are covered by the information described within
4982 Section 22.10(1)(c). To that extent, the applicant shall refer to Sections 22.3 and 22.5 to
4983 ensure all relevant material is addressed and included in the engineering report.

4984

4985 **22.10(1)(c)(i) Description of Proposed Project**

4986 The engineering report must describe the specific treatment processes and capacities planned
4987 for the proposed treatment works, unless the site location application is for an existing
4988 treatment works that does not require the construction of any modifications. The descriptions
4989 of each treatment process and capacity shall be thorough, and discussed in order of flow
4990 through the proposed treatment works. This preliminary information must adequately
4991 demonstrate that the selected treatment processes are capable of complying with the
4992 requirements of the design criteria and have the ability to achieve continuous compliance
4993 with the WQPTs.

4994

4995 **22.10(1)(c)(ii) Map Identifying the Site**

4996 The engineering report shall include map(s) identifying the site of the existing and proposed
4997 treatment works. To facilitate processing of the site location application, the Division also
4998 expects the map(s) to show the proposed treatment works in relation to boundaries of the
4999 existing site location approval. The map(s) must identify any local water bodies, streams, and
5000 rivers within the vicinity of the site location, and delineate the location of the proposed
5001 project relative to any floodplain or other natural hazard. The map(s) shall be to scale to
5002 allow the Division to determine set-back distances in accordance with this policy.

5003

5004 **22.10(1)(c)(iii) Existing and Proposed Site Plan or Process Flow Diagram**

5005 The engineering report shall contain a preliminary PFD for both the liquid and solids
5006 processing streams, and shall represent the order of flow through the existing and proposed
5007 treatment works. In cases where a PFD may not be practical (e.g lift station projects), a site
5008 plan shall be provided indicating the location of proposed treatment works or appurtenances
5009 in relation to the existing treatment works.

5010

5011 **22.10(1)(c)(iv) Loading, Capacity, and Performance Analysis of Existing Treatment**

5012 **Works**

5013 As part of the planning stage, the engineering report must document and analyze the loading,
5014 capacity, and performance of the existing treatment works. All information provided in this
5015 section of the engineering report shall be developed from at least three (3) years of historical
5016 data, and the analysis shall include the following, at a minimum:

5017

- 5018 1. Percent of existing service area developed (developed area/all developable area)
- 5019 2. Percent loading at existing maximum month conditions to the treatment works
 - 5020 a. Hydraulic loading to existing treatment works/site location approved hydraulic
 - 5021 design capacity
 - 5022 b. Percent organic loading/site location approved organic design capacity
- 5023 3. Existing influent capacity and loading evaluation
 - 5024 a. Average, maximum month, and peak hour (or other pertinent peak) hydraulic
 - 5025 loads
 - 5026 b. I&I
 - 5027 c. Organic and inorganic concentration and mass loadings
- 5028 4. Treatment works performance evaluation
 - 5029 a. PFD
 - 5030 b. Evaluation of major unit processes (preliminary, primary, secondary, and
 - 5031 tertiary treatment, disinfection, solids handling and treatment, etc.)
 - 5032 i. Average, maximum month, and peak hour hydraulic loading capacities
 - 5033 ii. Average, maximum month, and peak hour organic/inorganic loading
 - 5034 capacities
 - 5035 c. Identify performance limiting factors or processes
- 5036 5. Effluent discharge evaluation
 - 5037 a. Compliance issues
 - 5038 b. Causal analysis for any discharge limit exceedance

- 5039 6. Managerial impacts on performance and emergency response plan
- 5040 7. Financial impacts on performance

5041

5042 **22.10(1)(c)(v) Service Area, Population, and Loading Changes**

5043 When the project involves increasing or decreasing the rated design of an existing treatment
5044 works without construction, the engineering report shall address the requirements in this
5045 section of the policy. Thus, the engineering report shall define the boundaries of the service
5046 area for the design life of the proposed treatment works. The service area may be expressed
5047 in a variety of ways depending on the nature of the service area. The service area definition
5048 should be supported with adequate maps, legal property boundaries and descriptions,
5049 structures served, and/or specific land use descriptions. The engineering report shall provide
5050 both narrative and visual descriptions of the service area. As part of the service area
5051 definition, the engineering report shall indicate the proposed location of the treatment
5052 works. Depicting topography, local water bodies, streams, rivers, wetlands, endangered
5053 species habitat, domestic wells, drinking water treatment plant intakes and other treatment
5054 works aids with the review of the site location application, and must also be included on the
5055 service area map(s). The map(s) shall be to scale to allow the Division to determine set-back
5056 distances in accordance with information provided in this policy.

5057

5058 For all cases, the service area must represent the 20-year planning period, or some other
5059 clearly defined future planning period. This planning period must conform to the approved
5060 208 plan and/or the local long-range comprehensive plan. The applicant shall demonstrate
5061 that the service area is consistent with the approved 208 plan and/or the local long-range
5062 comprehensive plan. For additional information pertaining to the use of local and regional
5063 water quality planning information, refer to the information presented in Sections 22.3(1)(a)
5064 and 22.5(1)(k) of this policy. To demonstrate consistency with these approved plans, the site
5065 location application must address the information identified in this policy. For ease of review,
5066 the engineering report shall include applicable portions of approved plans that have been
5067 referenced.

5068

5069 Based on the service area, the engineering report must clearly estimate the flow and loading
5070 projections to be conveyed to the proposed treatment works for the projected planning
5071 period. The flow and loading projections must include average daily flow, maximum month
5072 average daily flow, peak hour flow (or instantaneous flow value based on the service area),
5073 and the associated organic loads, and must be developed using the design service area
5074 population, land use, and unique customer information.

5075

5076 **Population/Land Use Projections**

5077 The engineering report shall develop flow and loading estimates through population and/or
5078 land use projections.

5079

- 5080 ● Population Projections: Population projections are appropriate for single use service
5081 areas and well-defined residential developments that do not have significant
5082 commercial/industrial waste loads. For single use service areas, such as schools,

5083 churches, campgrounds, etc., the population shall be expressed as the number of each
5084 population type at build out or certified occupancy. Population types for a single use
5085 treatment works may include day staff, over-night staff, visitors, etc. For well-defined
5086 residential developments/communities, the engineering report may rely on historical
5087 census data extrapolations or typical household sizes (e.g., single family equivalent
5088 (SFE) = 3.2 persons, multi-family equivalent (MFE) = 2.1 person, etc.) and household
5089 types (zoned R-1, R-2, MFE, etc.) to estimate service area populations. All information
5090 used to develop population estimates must be well documented in the engineering
5091 report.

5092 ● Land Use Projections: Land use projections are appropriate for significant service
5093 areas with a variety of land uses. Typically, local planning documents use a
5094 combination of open space, floor area ratio, and zoning types to define development
5095 within a service area. The engineering report shall subdivide the service area into land
5096 use types, such as open space, commercial, residential (SFE, R2, MF, etc.), and
5097 translate this information into residential populations, industrial/commercial land use
5098 areas, or building square footages to determine appropriate loading estimates.
5099

5100 Note, general land use estimates may not be considered adequate for special circumstances
5101 (food processing facilities or computer chip manufacturing) in a small community. These
5102 industries may exceed typical average waste loading values used for planning. The
5103 engineering report must deal with these unique circumstances on a case-by-case basis.
5104

5105 Flow/Loading Projections

5106 Average Daily Flow: Following the development of population or land use projections, the
5107 engineering report shall develop an average daily flow for the service area over the defined
5108 planning period. When using historical data as the basis, the applicant shall use at least three
5109 (3) relevant years of matched population/land use and flow data. Potable water use data may
5110 be representative of wastewater flow with appropriate adjustments such as subtraction of
5111 outside irrigation water use. If historical data is not available, the engineering report shall
5112 use locally approved planning values for developing wastewater flows for each type of
5113 population/land use. If an approved comprehensive or master plan is not available, the
5114 engineering report shall justify planning values for wastewater flows for each type of
5115 population/land use. For single use service areas and OWTS, the engineering report shall
5116 develop the average daily flow using: 1) at least three (3) years of representative, matched
5117 daily population and flow data, if available, 2) planning values for flow provided in Regulation
5118 43 (or successor), or 3) other applicable and widely accepted planning or engineering
5119 reference manuals. The engineering report shall include documentation of all references.
5120

5121 Maximum Month Average Daily Flow (Design Capacity): After establishing the average daily
5122 flow, the engineering report shall develop the maximum month average daily flow. For single
5123 use facilities and OWTS, the maximum month average daily flow is at full occupancy, and for
5124 OWTS, the flow values must follow Regulation 43 (or successor) requirements unless justified
5125 otherwise. For sites with significant fluctuations in daily flow, maximum month average daily
5126 flow must consider days with reasonable flow and not minimalist days (e.g., school with 22

5127 days attendance divides monthly flow by 22 days, not 30 days). Some small-scale examples of
5128 maximum month average daily flow at full occupancy include:

- 5129
- 5130 ● A small motel with 24 rooms. Planning values in Regulation 43 would indicate flow of
5131 2,400 gpd (24 rooms, 2 per room, 50 gpcd). Evaluation of existing data with matched
5132 population might show average daily flow is 33 gpcd in January and 38 gpcd in August.
5133 Using the maximum month average daily flow (i.e., 38 gpcd in August) and pairing with
5134 full occupancy, the maximum month average daily flow at full occupancy would be
5135 1,824 gpd (48 people, 38 gpcd).
 - 5136 ● A rural school with 100 students and 20 staff. Planning values in Regulation 43 would
5137 indicate flow of 2,300 gpd (100 students at 20 gpcd with cafeteria but no gym or
5138 showers, 20 staff at 15 gpcd). Evaluation of existing data with matched population
5139 might show average daily flow is 14 gpcd in February and 16 gpcd in October including
5140 students and staff. Using the maximum month average daily flow (i.e., 16 gpcd in
5141 October) and pairing with full occupancy, the maximum month average daily flow at
5142 full occupancy would be 1,920 gpd (120 people, 16 gpcd).
- 5143

5144 For all other treatment works, the maximum month average daily flow must be tied to a
5145 special event, I&I, commercial and industrial contributions, a seasonal change in water use
5146 for a specific service area, or other justifiable and documented event. Due to the potential
5147 variability, this estimate shall be made using at least three (3) years of historic records. If
5148 historic records are unavailable, the engineering report shall document the basis for the
5149 proposed maximum month peaking factor. When the maximum flow stems from I&I estimates,
5150 the engineering report shall estimate I&I based on a percentage of the average daily flow.
5151 This seasonal flow should be added to the average daily flow as a non-peaked base flow to the
5152 proposed treatment works influent. Unsupported I&I estimates should be a minimum of 10
5153 percent of the average daily flow. The engineering report shall include documentation of all
5154 references.

5155

5156 Peak Hour Flow: The engineering report shall build from the average daily flow estimate to
5157 develop a peak hour design flow or other justified design peak, if deemed necessary based on
5158 the service area. For example, a treatment works providing service only to a sports stadium
5159 may need to accommodate the peak flow from all fixture units operating simultaneously. For
5160 OWTS with a design capacity of 2,000 gpd or less, the design must follow Regulation 43 (or
5161 successor) requirements unless justified otherwise. An OWTS design may include a design
5162 capacity (i.e., maximum month average daily flow at full occupancy) of 2,000 gpd or less
5163 while some system components (e.g., septic tank, soil treatment area) may be larger to
5164 adequately cover some days with above-average flow, thereby allowing permitting by the
5165 local public health agency provided that daily flow monitoring is being periodically reported
5166 to the local agency to confirm the design capacity is not exceeded. Flow equalization is part
5167 of a treatment works. If an OWTS design has flow equalization and design capacity (i.e.,
5168 maximum month average daily flow at full occupancy) of 2,000 gpd or less while some system
5169 components (e.g., septic tank, soil treatment area) are larger to adequately cover some days
5170 with above-average flow, the flow equalization can be used to smooth out peak day flows and

5171 still allow permitting by the local public health agency. However, flow equalization in a
5172 treatment works receiving flows greater than 2,000 gpd for a maximum month average daily
5173 flow at full occupancy will require site application and design review and approval. For all
5174 other treatment works, the engineering report shall develop either a single composite peaking
5175 factor for all types of population/land uses or individual peaking factors for each type of
5176 population/land use. The peaking factors should be developed from at least three (3) years of
5177 historical data. If historical data is not available, the design shall rely on locally approved
5178 peaking factors or industry accepted peaking factor formulas. The engineering report shall
5179 include documentation of all references.

5180

5181 Organic Loading: With the projected service area flows established, the engineering report
5182 shall estimate the organic loading to the proposed treatment works. The engineering report
5183 must consider historical organic loading, special users (commercial, industrial, etc.), typical
5184 domestic organic loads, and local planning requirements. The engineering report shall
5185 evaluate at least three (3) years of historical data. If not available, the engineering report
5186 shall justify the organic loading to the proposed treatment works through an analysis of
5187 individual user types and their anticipated organic loading. For single use facilities and OWTS,
5188 where historical data is unavailable, the engineering report shall rely on the planning values
5189 provided in Regulation 43 (or successor) or other applicable and widely accepted planning or
5190 engineering references. The engineering report shall include documentation of all references.

5191

5192 Staging or Phasing

5193 Based on initial flows and loads, sometimes the proposed treatment works cannot function
5194 effectively especially when designed for the long-range planning associated with the service
5195 area. In this case, the applicant shall develop an operational plan, and this plan shall be
5196 included as part of the site location application rather than during the design review phase.
5197 The operational plan must clearly identify measurable and definitive guidelines for
5198 constraining conditions. Please refer to section 22.13 in this policy for specific information.

5199

5200 **22.10(1)(c)(vi) Impact to Performance of the Treatment Works**

5201 The engineering report shall address how the proposed project could impact other treatment
5202 processes at the existing treatment works. The impacts could be in the form of hydraulic,
5203 pollutant(s), or solids loadings caused by, for example, an increase in hydraulic losses,
5204 addition of chemicals to the process, or change in the characteristics of recycle streams.
5205 Information in the form of a hydraulic profile, solids balance, and/or process calculations or
5206 modeling shall be provided to ensure that the treatment works can maintain the rated design
5207 capacities defined in the existing site location approval while continuing to meet the existing
5208 discharge permit effluent limitations or WQPTs.

5209

5210 **22.10(1)(c)(vii) Project Cost and Funding Source**

5211 Where construction is required for the project, the engineering report shall identify the total
5212 project costs (i.e., including administrative, engineering, and construction) associated with
5213 the proposed treatment works, and must include evidence of sufficient financial resources to
5214 construct the proposed treatment works.

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Funding for Privately Owned Treatment Works and Developers

If the applicant intends to finance the project independently, evidence of such financial capability in the form of written communication from a financial institution attesting to the applicant’s possession of adequate capital to undertake the proposed project must be included with the engineering report. In the event that the applicant requires a loan to complete the project, the engineering report must include a letter from a financial institution, bond advisor, or other loan program indicating its intent to make such a loan for the purpose of constructing the proposed treatment works.

Funding for Municipal Treatment Works

For municipal or publicly financed treatment works, the applicant must address capital construction capabilities by demonstrating available cash resources through including copies of current budget documents with the engineering report. If the applicant intends to finance the project using loan and grant funds, the engineering report must include documentation from any provider agreeing to issue loans and/or grants for the proposed project including the SRF program. If the applicant intends to fund the project using bonds, the engineering report must include a copy of the report from a bond advisor or intended bond underwriter.

22.10(1)(c)(viii) Impacts to Facility Operator Classification

The engineering report must identify the current certification level of the operator in responsible charge for the existing treatment works and the change, if any, in the facility classification as a result of the proposed project. If the proposed project results in a change of the facility classification, the engineering report must discuss how the applicant will meet the requirements of *Regulation No. 100 - Water and Wastewater Facility Operators Certification Requirements* (Regulation 100) (e.g., current certified operator in responsible charge maintains or will obtain the necessary certification level, or the applicant will hire a certified operator with the necessary certification level).

22.10(1)(c)(ix) Project Schedule

Where construction is required for the project, the engineering report must include a project or implementation schedule for the proposed treatment works. The schedule shall be presented in the form of a timeline or Gantt chart with a written narrative discussing critical milestones to meet the proposed start-up date (month and year). At a minimum, the schedule shall include the estimated time to construct the proposed treatment works from the commencement of construction to start-up, any required staging or phasing, and the projected start-up date. Additional information, such as projected site location approval, design review submittal, design approval, and bid award dates can assist the Division in visualizing the applicant’s overall schedule. In cases where the project involves increasing or decreasing the rated design capacity of an existing treatment works without construction, the schedule shall include milestones for site location approval, design review submittal, and design approval.

5258 **22.10(1)(c)(x) Geotechnical Information for New Structures**

5259 For projects requiring new structures or foundations, Regulation 22 indicates that the
5260 engineering report must include the information used to evaluate geotechnical conditions at
5261 the proposed and alternative sites. Since geotechnical conditions of each alternative site may
5262 impact the ultimate location of the proposed treatment works, the engineering report shall
5263 only be required to discuss the general geotechnical conditions at each alternative site due to
5264 the potential cost implications, but shall be required to provide a site-specific geotechnical
5265 investigation for the proposed site located within the boundaries of the existing site location
5266 approval.

5267
5268 For the proposed site, the applicant has two ways to address the site location application
5269 requirements within the engineering report, which include either providing preliminary
5270 geotechnical information or a formal geotechnical report.

5271
5272 **Preliminary Geotechnical Information**

5273 First, the engineering report can include preliminary geotechnical information for the
5274 selected site comprised of reference materials available from the Natural Resource
5275 Conservation Service (i.e., Soil Surveys), Colorado Geological Survey, on-site or nearby
5276 geotechnical investigations, or other geotechnical data deemed representative of the site.
5277 The preliminary geotechnical information for all proposed groundwater discharges must
5278 provide an indication of anticipated percolation rates or include soil profile test pit
5279 information from similar conditions completed in accordance with Regulation 43 (or
5280 successor) or overriding local requirements. In using the preliminary geotechnical
5281 information, Regulation 22 identifies that the information provided must be sufficient for
5282 “that person” to make a determination that the site can reasonably be expected to support
5283 the proposed treatment works. The Division interprets “that person” to be a professional
5284 geologist or a Colorado licensed professional engineer with an appropriate level of experience
5285 investigating geologic site conditions. The Division expects “that person” to either review or
5286 create the data provided within the engineering report, and provide a statement indicating
5287 that the selected site can reasonably be expected to support the proposed treatment works.
5288 The engineering report shall continue to build on the materials provided with the preliminary
5289 geotechnical information by discussing the impact of the findings at each alternative site on
5290 the design, construction, operation, and maintenance of the proposed treatment works.

5291
5292 Note that Section 22.7(1)(c)(vii) of Regulation 22 states that the Division may require that
5293 geotechnical evidence be presented in the form of a report. The Division interprets this to
5294 mean that the applicant must submit a geotechnical report for all proposed treatment works
5295 during the site location application or design review process, unless waived by the Division in
5296 writing.

5297
5298 **Formal Geotechnical Report**

5299 Thus, the applicant may submit a formal geotechnical report instead of preliminary
5300 geotechnical information for the selected site location of the treatment works at the time of
5301 site location application. The applicant may also use a formal geotechnical report prepared

5302 for previous work conducted at the existing treatment works to fulfill this requirement. At a
5303 minimum, this geotechnical report shall include site-specific soil boring information that
5304 discusses seasonal and measured groundwater conditions, soil bearing capacity, excavation
5305 benching, shoring, and sloping, bedding and backfill, compaction and moisture conditioning,
5306 alternative foundation design, an analysis of geotechnical hazards, and design
5307 recommendations based on the findings. The geotechnical report for all proposed
5308 groundwater discharges must provide percolation test data at the proposed discharge
5309 elevation or must present soil profile test pit information completed in accordance with
5310 Regulation 43 (or successor). Per Regulation 22, the Division may require a geotechnical
5311 report stating that the site will support the proposed treatment works. When the minimum
5312 requirements of the geotechnical report are met, the Division considers the associated design
5313 recommendations contained within the report to indicate that the site will support the
5314 proposed treatment works. At this point, the submittal of the formal geotechnical report
5315 would fulfill the geotechnical submittal requirements for both the site location and design
5316 application submittal, and resubmittal of the geotechnical report during the design review
5317 process is not required.

5318

5319 *Conditional Site Location Approval based on Preliminary Geotechnical Information*

5320 If the engineering report only includes preliminary geotechnical information as a means to
5321 determine that the site can reasonably be expected to support the proposed treatment
5322 works, then the site location approval will be issued conditionally upon the applicant
5323 providing a formal geotechnical report as part of the design review submittal. Additionally, if
5324 the applicant receives a conditional site location approval based on only preliminary
5325 geotechnical information but the formal geotechnical report submitted during the design
5326 review phase indicates that the site will not support the proposed treatment works, the
5327 applicant shall provide a statement as such in writing to the Division. The Division may modify
5328 the original site location approval, which may require the applicant to reapply for a site
5329 location approval at an alternate site under Section 22.6 of Regulation 22.

5330

5331 *22.10(1)(c)(xi) Request for Chemical Evaluation Form*

5332 In cases where the proposed project will introduce the use of a new chemical to the existing
5333 treatment works (e.g., a change from other types of disinfection to chlorination, the use of
5334 ferric chloride or aluminum sulfate as a coagulant to remove phosphorus or metals, etc.), the
5335 applicant shall be required to submit the *Domestic Water Quality Planning Target/PEL*
5336 *Application Form* (replaces the use of the Chemical Evaluation Form) to the Permits Section
5337 to determine whether the existing permit, permit modification, or new permit can serve as
5338 the WQPTs for the proposed project. The applicant shall include a copy of the determination
5339 from the Permits Section in the engineering report.

5340

5341 *22.10(1)(c)(xii) Outfall Sewer Location*

5342 If the proposed project includes the construction of a new outfall sewer, the map required
5343 under Section 22.10(1)(c)(ii) of Regulation 22 shall include the location of the new outfall
5344 sewer in relation to the boundaries of the existing site location approval. The engineering
5345 report shall additionally identify the discharge location of the new outfall sewer and the

5346 stream segment to receive the treated wastewater effluent. Note, if the new outfall sewer
5347 requires ownership of property or an easement outside the boundary of the existing site
5348 location approval, the applicant must submit the project through Section 22.6.

5349

5350 **22.10(1)(c)(xiii) Review Agency Notification**

5351 Regulation 22 requires the applicant to provide copies of the site location application and
5352 engineering report to the review agencies prior to submission to the Division. The agencies
5353 will evaluate the site location application based on each agency's plans, policies, rules and
5354 regulations, which may include the 208 plan for the area, should such a plan exist. The
5355 applicant must perform all necessary coordination and supply all information to the agencies.
5356 These agencies may include the county, city or town, local health authority, designated
5357 planning and management agencies, and any other state or federal agencies (for a list of
5358 county health agencies and 208 planning and management agencies refer to Appendix B).

5359

5360 The applicant shall provide each review agency at least 15 days to review the site location
5361 application and engineering report. The site location application shall include dated
5362 correspondence to each review agency to demonstrate that 15 days was allowed for each
5363 review. The applicant may submit the site application to the Division prior to fifteen 15 days,
5364 but the Division will not complete a site location decision prior to providing all review
5365 agencies the allotted review times as indicated in Regulation 22. For amendments of existing
5366 site location approvals, the review agencies are encouraged to comment directly to the
5367 Division unless a brief (less than 15 working days) extension is requested in writing. Any
5368 correspondence or comments received by the applicant from a review agency after submittal
5369 of the site location application shall be forwarded to the Division.

5370

5371 Note, the applicant is not required to provide copies to the review agencies for the types of
5372 disinfection modifications described in section 22.10(2)(a)(ii).

5373

5374 **22.10(1)(c)(xiv) Water Quality Planning Targets**

5375 The applicant must submit a *Domestic Water Quality Planning Target/PEL Application Form*
5376 to the Permits Section in order to determine the WQPTs needed for the proposed project.
5377 WQPTs can consist of existing permits, water quality assessments, a permit modification, a
5378 new permit, a PEL document, a limited-scope PEL, or a combination thereof. A copy of the
5379 determination from the Permits Section identifying the document to be used as the WQPTs
5380 shall be included with the engineering report. If the determination requires the applicant to
5381 perform a permit action or obtain PELs for the proposed project, then the applicant must
5382 apply for these documents prior to submitting a site location application for review. For
5383 additional information concerning the WQPT determination process and how to obtain PELs,
5384 the applicant shall refer to the following Permits Section's *Water Quality Planning Targets*
5385 *and Preliminary Effluent Limitations (PELs)* web page:

5386 https://cdphe.colorado.gov/WQ_Planning_Targets_and_PELs.

5387

5388 In the case where PELs are required for the proposed project, the PELs will provide discharge
5389 criteria specific to the stream segment, or groundwater, receiving the discharge at the

5390 proposed design hydraulic capacity. The applicant shall include a copy of the PELs with the
5391 site location application. If there are questions regarding the validity of older PELs, the
5392 application should refer to the November 2020 Division guidance document, [Establishment of](#)
5393 [Water Quality Planning Targets and PELs](#). When PELs are no longer valid, the applicant shall
5394 be required to obtain a new determination of WQPTs. Note, the request for new WQPTs by
5395 the applicant may inherently delay the site location application review by the Division.

5396
5397 When PELs are developed for the proposed project, the PEL document will establish
5398 limitations for three (3) sets of parameters.

- 5399
- 5400 1. The first set of parameters may contain the following: BOD, TSS, E. coli, pH, nitrogen
5401 species (i.e., ammonia, nitrate, nitrite, TIN, and TN), TRC, and TP. The Division may
5402 also include other parameters in the first set of limitations, particularly where a
5403 current permit includes a limit for a given parameter. During the site location
5404 application process, the Division will evaluate the selected treatment alternative to
5405 ensure the technology can meet the limitations defined for the first set of parameters.
 - 5406 2. The second set of parameters may contain all of the metals, inorganic parameters,
5407 and WET testing for which numeric standards have been adopted by the Commission
5408 for the receiving stream segment, or groundwater, and proximate downstream
5409 segments, except those included in the first set of parameters. During the site location
5410 application process, the Division may or may not evaluate the selected treatment
5411 alternative to ensure the technology can meet the limitations defined for the second
5412 set of parameters depending on how the applicant plans to address these limitations.
5413 The limitations contained in this second set may be able to be met by the
5414 development of a pretreatment program, the refinement of local limits under an
5415 existing pretreatment program, or other methods of source water control. In these
5416 instances, the ability of the treatment works to meet these limitations will not be
5417 reviewed under the site location application process and are the responsibility of the
5418 permittee. If treatment or other operational control methods are to be used specific
5419 to a parameter(s) in the second set, the ability of the treatment works to meet the
5420 limitation(s) will be reviewed under the site location application process.
 - 5421 3. The third set of parameters may contain a summary of potential Regulation 31
5422 nutrient limitations that have been developed for the PEL. The WQBELs expressed in
5423 the third set of parameters are based on standards that have not yet been adopted by
5424 the Commission, but become effective December 31, 2027, as currently written. The
5425 values are provided for planning purposes in order to assist the applicant in long-term
5426 planning for nutrient removal. This may be especially beneficial for applicants using
5427 the SRF program or other federal funds to finance a proposed project, where the
5428 applicant is required to perform an alternatives analysis projecting current and future
5429 costs for specific treatment processes.

5430
5431
5432

5433 Where a Temporary Modification of a Standard for the Second Set Parameters or a Site-
5434 Specific Ambient-Based Standard Has Been Approved by the Commission

5435 Where a temporary modification is in place (at the time the Division begins working on the
5436 PELs) for a parameter which is based on significant uncertainty regarding the water quality
5437 standard necessary to protect current and/or future uses, or which is based on significant
5438 uncertainty regarding the extent to which existing quality is the result of natural or
5439 irreversible human-induced conditions, the Division will determine the appropriate PEL based
5440 on Section 31.9(4) of Regulation 31. Where another type of temporary modification is in place
5441 (i.e., one based on significant uncertainty regarding the timing of implementing attainable
5442 source controls or treatment), the PEL will be set based on the underlying standard.

5443
5444 Where a site-specific, ambient-based standard has been approved by the Commission and is in
5445 place at the time the Division begins working on the PELs, the PEL for that parameter will be
5446 based on the site-specific standard.

5447

5448 **22.10(1)(c)(xv) Anticipated Future Effluent Limits**

5449 The engineering report shall provide a high-level discussion concerning how the proposed
5450 project fits within the applicant's long range plan and how the changes will allow the
5451 treatment works to maintain compliance. The applicant may use the Regulation 31 planning
5452 limits provided as part of any WQPTs to aid in this discussion.

5453

5454 **22.10(2) Amendment of an Existing Site Location Approval for a Treatment Plant**

5455 An amendment of an existing site location approval for a treatment plant shall be required for
5456 any of the projects described in Section 22.10(2) of Regulation 22, which are discussed in
5457 more detail at the beginning of this section of the policy. The amendment site location
5458 application process is only available for changes where the treatment plant has received prior
5459 site location approval or was constructed prior to November 1967 and has not been expanded
5460 or modified since that date. The Division wishes to clarify the in-kind replacement language
5461 provided under this section of Regulation 22. An amendment is not required if the project
5462 consists of changes that meet the definition of in-kind replacement or the provisions of O&M
5463 as described in Section 22.12. However, if the project does not include construction but
5464 involves an increase or decrease in design capacity, the project shall be submitted as an
5465 amendment to an existing site location approval. On the other hand, if the project is being
5466 used to derate the design capacity of an existing treatment works to 2,000 gpd or less, then
5467 the applicant must submit the project through Section 22.7 of Regulation 22.

5468

5469 **22.10(3) Amendment of an Existing Site Location Approval for a Lift Station**

5470 An amendment of an existing site location approval for a lift station shall be required for any
5471 of the projects described in Section 22.10(3) of Regulation 22, which are discussed in more
5472 detail at the beginning of this section of the policy. The amendment site location application
5473 process is only available for changes where the lift station has received prior site location
5474 approval or was constructed prior to November 1967 and has not been expanded or modified
5475 since that date. Also, the amendment process is not available for increasing or decreasing the
5476 design capacity of a lift station regardless of whether construction will take place. The

5477 Division wishes to clarify the review agency notification requirements under this section of
5478 Regulation 22. Per Section 22.10(1), the applicant is required to submit the site location
5479 application to the review agencies identified in Section 22.9, and the review agencies
5480 notification procedures shall be in accordance with Sections 22.10(1) and 22.10(1)(c)(xiii) of
5481 Regulation 22 and the associated sections of this policy. The applicant is not expected to gain
5482 signatures or comments from the review agencies, and the review agencies shall be given 15
5483 working days to review and comment directly to the Division. If a proposed project involves
5484 the addition of biological treatment at a lift station site location, the project will not be
5485 eligible for submittal as an amendment of an existing site location approval, and will be
5486 handled on a case by case basis to be determined by the Division.

5487 **22.11 APPLICATION PROCEDURES FOR DEMONSTRATION PROJECTS**

5488

5489 A treatment works with a site location approval may submit a site location demonstration
5490 project application to temporarily modify their site location approval or conditional site
5491 location approval for the evaluation of processes, chemicals, and technologies. Demonstration
5492 projects have a limited time period during which testing may be conducted and cannot
5493 extend beyond two (2) years without receiving an extension from the Division. During the
5494 duration of the demonstration project, the treatment works must comply with permit
5495 effluent limitations and other permit conditions. Demonstration projects require site location
5496 approval prior to commencement of construction, operation, and testing. The site location
5497 approval does not relieve the owner from compliance with all local, state, and federal
5498 requirements (e.g., local building permit).

5499

5500 As defined in Regulation 22, a “DEMONSTRATION PROJECT” means testing of an individual
5501 process, technology, or chemical, or combination(s) of processes, technologies, and/or
5502 chemicals at an existing facility that has previously obtained site location and design
5503 approval. Demonstration projects occur at a scale, location in the process, or configuration
5504 that may have the potential to affect water quality or treatment capabilities. Sufficient
5505 testing and data are needed to support an alternative technology application. Where that
5506 data does not already exist, is not applicable to, or cannot be correlated to accommodate
5507 Colorado-specific conditions, such as extreme temperatures and high-altitude facility
5508 installations, Colorado-specific testing and data may be needed to support an alternative
5509 technology application and a demonstration project may be required. Demonstration projects
5510 require site location approval prior to commencement of construction, operation, and testing.
5511 Any Division determination regarding whether a project is a demonstration project is separate
5512 from a Division determination of permit compliance and whether a permit modification is
5513 required.

5514

5515 Demonstration projects are intended for testing individual unit processes, technologies,
5516 chemicals, or combinations at existing facilities. Demonstration projects are larger-scale,
5517 longer term projects that have the potential to affect water quality or treatment capabilities.

5518

5519 Pilot projects do not require site location approval prior to commencement. Pilot projects are
5520 small-scale, temporary investigations such as bench top studies, vendor equipment proofs, or
5521 projects with a hydraulic throughput of less than 1.5 percent of the treatment works’ current
5522 average daily flow. Process optimization activities of existing, approved infrastructure at a
5523 treatment works are considered pilots even if operated at full-scale.

5524

5525 As defined in Regulation 22, a “PILOT PROJECT” means testing of an individual process,
5526 technology, or chemical, or combination(s) of processes, technologies, and/or chemicals at an
5527 existing facility that has previously obtained site location and design approval. Pilot projects
5528 occur at a scale, configuration, and location in the process that does not qualify as a
5529 demonstration project. Examples of pilot projects include short-term equipment testing that
5530 does not impact the liquid stream directly or through recycle flows and process optimization

5531 to achieve more efficient treatment, reduction in pollutants discharged, or improved water
5532 quality and that occurs within the existing treatment configuration authorized under a
5533 previous site application. Pilot projects do not relieve permittees from complying with
5534 discharge permit requirements. The operation and configuration of pilot projects must be
5535 capable of being returned to approved site location and design conditions immediately and
5536 without capital construction. Pilot projects do not require site location approval prior to
5537 commencement. Any Division determination regarding whether a project is a pilot project is
5538 separate from a Division determination of permit compliance and whether a permit
5539 modification is required.

5540

5541 Examples of pilot projects include:

5542

- 5543 1. Bench scale testing with or without chemicals. Bench Scale Testing means testing of
5544 materials, methods, technologies, equipment or processes at laboratory scale, such as
5545 on a laboratory worktable, disconnected from the full-scale treatment process;
- 5546 2. Process optimization to achieve more efficient treatment or improved water quality
5547 and that occurs within the existing treatment configuration authorized under a
5548 previous site location approval unless it may impact data collected from samplers or
5549 flow meters used for discharge monitoring report (DMR) reporting. The operation and
5550 configuration can be returned to approved conditions immediately and without capital
5551 construction;
- 5552 3. Short-term equipment trials (less than 6 months in duration) if testing does not impact
5553 the liquid stream directly or through recycle flows; and
- 5554 4. Projects with hydraulic throughputs less than 1.5 percent of the treatment works'
5555 current daily average hydraulic flow where the project effluent routes upstream of
5556 secondary treatment.

5557

5558 **General Site Location Application Procedures for Demonstration Projects**

5559

- 5560 1. Once the Division receives the information indicated in Section 22.11, the Division will
5561 review the submittal and when all requirements are met, will issue written approval to
5562 proceed with the proposed demonstration project.
- 5563 2. Throughout a demonstration project, the Division retains its enforcement authority as
5564 it relates to the Colorado Water Quality Control Act. The applicant will be responsible
5565 for ensuring that the demonstration project does not cause non-compliance with the
5566 discharge permit for the treatment works at which the demonstration project is being
5567 implemented.
- 5568 3. Prior to permanent utilization of the process/technology involved in the demonstration
5569 project, site location and design approval must be obtained.
- 5570 4. The demonstration project will be reviewed against the criteria in Table 11-1 to
5571 determine whether a demonstration approval is required based on the requirements of
5572 Regulation 22. Where a project may fall into various categories, the Division will
5573 consider the most stringent requirement for demonstration projects that meet the
5574 criteria of multiple testing environments. If a situation is unclear, the Division requires

- 5575 the permittee to request a determination from the Division prior to initiation of the
5576 demonstration project.
- 5577 5. Temporary construction (e.g., tanks, process piping, appurtenances) directly
5578 associated with the implementation of the demonstration project is acceptable and
5579 does not require Division notification or approval provided the testing configuration
5580 can be returned to prior operating conditions immediately and without capital
5581 construction.
- 5582 6. Coordination with the Division early in the demonstration process is encouraged to
5583 determine if a technology falls into the "Alternative Technology" category. An
5584 alternative technology review process is for new or nonconforming technologies not
5585 represented in the current design criteria. Alternative technology refers to an
5586 established or innovative technology with a compliance record that is in use in other
5587 states or countries, but is alternative in the sense that Colorado design criteria have
5588 not been developed for the technology. Thus, the technology is not currently accepted
5589 for use in Colorado.
- 5590 7. If the applicant foresees that demonstration project test results may be used in the
5591 future for a site location application, it is generally recommended to involve the
5592 Division early to assure data collected satisfies the needs of the Division for the review
5593 and approval process.
- 5594 8. Demonstration projects have a limited time period during which testing may be
5595 conducted and cannot extend beyond two (2) years without receiving an extension
5596 from the Division. The Division may authorize the operation of demonstration
5597 equipment and processes beyond two (2) years upon written request. The written
5598 request shall specify the reason(s) for the extension request, set forth a proposed
5599 schedule for completion of the demonstration project, and identify a specific date by
5600 which the demonstration project will conclude. For example, extension requests may
5601 be made for the following: awaiting a Division decision of site location and design
5602 applications, alternative technology application, or permit modification; construction
5603 of the permanent installation; or other circumstance that could not reasonably be
5604 foreseen at the time of the initial demonstration project approval. Requests for
5605 extension of the demonstration project testing period must be made in writing no
5606 later than 45 calendar days prior to the end of the authorized testing period. For
5607 projects lasting two (2) years, it is recommended to submit intermediate findings and
5608 results to the Division after the first year of operation to coordinate and address any
5609 possible data gaps that may delay a later site location application approval or
5610 alternative technology acceptance.
- 5611 9. Once the demonstration testing period ends, the tested equipment/process must be
5612 taken off-line.
- 5613 10. Posting of the site and review agency notifications are not required for demonstration
5614 projects.
- 5615
5616
5617
5618

5619 **Table 11-1 Pilot and Demonstration Project Categories and Requirements**
 5620

Project Type	Pilot Project	Demonstration Project	Site Location Approval Required
Equipment Trial for less than 6 months in duration	X		No
Equipment Trial for more than 6 months in duration		X	Yes
Temporary testing projects which discharge directly to the environment		X	Yes
Temporary testing projects with hydraulic throughputs less than 1.5 percent of the treatment works' current daily average hydraulic flow where the project effluent routes upstream of secondary treatment	X		No
Temporary testing projects with hydraulic throughputs greater than 1.5 percent of the treatment works' current average daily hydraulic flow		X	Yes

5621
 5622 **Submittal Expectations for Requesting Approval to Conduct the Demonstration Project**
 5623

5624 1. The applicant for a demonstration project at an approved site location shall prepare
 5625 and submit the following form and information to the Division:

- 5626 ● Domestic Water Quality Planning Target/PEL Application Form
- 5627 ● [Section 22.11 - Demonstration Project](#); and
- 5628 ● Demonstration Project Testing Plan.

5629
 5630
 5631 The site location application, including the necessary forms, shall be submitted
 5632 electronically to the Division using the following email address:
 5633 CDPHE.WQEngReview@state.co.us. The Division prefers one (1) complete electronic
 5634 application, and may request a paper copy for all or part of the application, as
 5635 required, to facilitate the review process. The applicant must fill in the form
 5636 completely and accurately prior to submission to the Division. All information provided
 5637 on the application must conform to the requirements set forth in Regulation 22 and in
 5638 this policy.

5639 2. Existing effluent limitations or communication from the Division explaining what
 5640 document will be the project's WQPTs and the associated document. To have WQPTs
 5641 evaluated for the demonstration project, submit a Domestic Water Quality Planning
 5642 Target/PEL Application Form to the Permits Section. The evaluation will determine
 5643 the limitations that can be used for the project or when PELs need to be obtained. For

- 5644 chemical additions, planned injection rate(s) and safety data sheet (SDS) information
5645 for each chemical shall be included in the Demonstration Project Testing Plan.
- 5646 3. Accompanying the application form shall be a Demonstration Project Testing Plan
5647 describing the proposed project. The Plan (i.e., engineering report) shall meet all the
5648 requirements of Section 22.4 and shall be signed and sealed by a State of Colorado
5649 licensed professional engineer in accordance with the *Bylaws, Rules and Policies of*
5650 *the State Board of Licensure for Architects, Professional Engineers, and Professional*
5651 *Land Surveyors* issued by DORA. The Plan shall address/include the following at a
5652 minimum:
5653
- 5654 a. Project goal and description of the demonstration test technology, process, or
5655 chemical;
 - 5656 b. Relevant information the Division must consider pursuant to Sections 22.3 and
5657 22.5 of Regulation 22;
 - 5658 c. Description of the testing protocol including sampling plan with testing
5659 frequencies, locations, and methods. The planned sampling and analyses to be
5660 performed shall demonstrate unit-by-unit performance as a result of the
5661 demonstration project testing;
 - 5662 d. Site plan or PFD (before and during proposed demonstration installation) that
5663 indicate how and where the demonstration project will be installed and
5664 incorporated into the existing treatment works. Show all equipment, tanks,
5665 treatment processes, chemical additions and waste streams;
 - 5666 e. A description of the nature and extent of construction work that will be
5667 required to implement the demonstration project. Where construction will be
5668 required for the demonstration project, submission of sufficient information to
5669 demonstrate compliance with the requirements of the design criteria;
 - 5670 f. Identification of any waste streams that will be generated by the
5671 demonstration project and a description of the disposal method for each waste
5672 stream;
 - 5673 g. A description of how the proposed project will impact the performance of
5674 other parts of the treatment works and the impact on each unit treatment
5675 process's ability to meet effluent limitations (existing and proposed WQPTs);
5676 and
 - 5677 h. Project schedule including proposed start and end dates.
- 5678
- 5679 4. The Division's approval may require submission of interim reporting, depending on the
5680 specifics of the demonstration project.
- 5681 5. Upon completion of the demonstration project and in accordance with the
5682 requirements stated in the site location approval letter for the demonstration project,
5683 the applicant may need to submit a Demonstration Project Testing Report to the
5684 Division. If this report is required, it shall include a summary of the testing activities,
5685 sampling and analyses results, and a discussion of findings and conclusions.
5686

5687 Note, for the site location application submittal requirements for permanent utilization of
5688 demonstration tested technology/processes, refer to Section 22.7 or 22.10, as applicable, of
5689 Regulation 22.

5690 **22.12 IN-KIND REPLACEMENT**

5691

5692 Purpose and Basis of the In-Kind Replacement

5693 On September 30, 2009, the Commission added the “In-Kind Replacement” section to
5694 Regulation 22 as a means for a person to replace a piece of equipment with a similar piece of
5695 equipment that has a slightly higher rating without having to obtain site location approval.
5696 Section 22.23 of Regulation 22 further discusses the basis and purpose for the Commission’s
5697 adoption of the “In-Kind Replacement” section, and the Division used the information
5698 provided in this section as a foundation to interpret the sections of Regulation 22 relating to
5699 in-kind replacements and set appropriate expectations.

5700

5701 Based on Section 22.23 of Regulation 22, the Commission intended to allow replacement or
5702 technology upgrades to qualify as in-kind replacement as long as the original intent of the
5703 unit process being renovated was not changed. Additionally, the Commission expected in-kind
5704 replacement requests to be generally limited to equipment/structural failures or where the
5705 expected design life had been reached and replacement was prudent to assure continued
5706 compliance. Originally, “continued compliance” appeared in a slightly different form under
5707 the definitions section of Regulation 22, which indicated that in-kind replacements must be
5708 part of normal or emergency maintenance to assure continued compliance with applicable
5709 permit conditions, including effluent limitations. Understanding that “continued compliance”
5710 could not be applied equally to treatment plants, lift stations, and interceptor sewers, the
5711 Commission included language in the June 14, 2020 revision of Regulation 22, per Section
5712 22.2(16), that associated “continued compliance” with site location, design, and permit
5713 conditions. Thus, the Division shall evaluate the replacement of any process treatment
5714 component or hydraulic conveyance component at an existing, approved treatment works to
5715 assure continued compliance with the Division-issued site location and design approval(s), as
5716 well as any applicable excerpts from a treatment plant’s discharge permit.

5717

5718 Projects That Do Not Require Division Notification

5719 Projects considered O&M activities or identical replacements are exempt from Regulation 22
5720 and this policy, and the project may be completed without Division notification or site
5721 location approval. This stance is first mentioned in Section 22.2(16) of Regulation 22, where
5722 the definition contains language disclosing that in-kind replacement does not include O&M
5723 activities or identical replacements of any process treatment component or hydraulic
5724 conveyance component at an existing approved treatment works. Additional language
5725 provided under Section 22.12(1) of Regulation 22 identifies that Division notification is not
5726 required for O&M activities or identical replacements of a process treatment component or
5727 hydraulic conveyance component including but not limited to, replacement with the same
5728 size and technology in the same location or for replacement of valves, non-wastewater lifting
5729 pumps, piping, pipe relining, yard structures, motors, splitter structures, manholes, vaults,
5730 samplers, monitoring equipment, and support systems. While generally in agreement that
5731 these types of activities are considered O&M, the Division feels that further clarification is
5732 needed for some of the activities identified.

5733

5734 Replacement with same size and technology in the same location is identified as an O&M
5735 activity, but the term “size” can be ambiguous to the component being replaced. Specifically
5736 in the case of aerators, blowers, mixers, and pumps, the Division is concerned with the rating
5737 (e.g., hydraulic, scfm, power imparted) of the equipment, rather than the impeller/rotor
5738 diameter, impeller/motor speed, motor horsepower, or outlet diameter. The Division
5739 understands that for a given rating, the latter items may vary between manufacturers. The
5740 term “size” refers to the rating of the equipment, and O&M activities applies to the
5741 replacement of the equipment where the rating is maintained. Under these conditions, the
5742 impeller/rotor diameter, impeller/motor speed, motor horsepower, or pump outlet diameter
5743 may vary.

5744
5745 Non-wastewater lifting pumps normally do not affect the hydraulic design capacity of a
5746 treatment plant, but they can directly affect process and/or overall treatment plant
5747 capabilities (i.e., organic design capacity). For instance, improperly sizing a return activated
5748 sludge (RAS) pump could lead to a failure in the clarification process allowing increased TSS
5749 to be discharged from the treatment plant, as well as affect the treatment capabilities of
5750 downstream treatment processes. However, improperly sizing pumps used to convey the grit
5751 slurry from a grit chamber could lead to increased pump run times and/or needing to perform
5752 additional O&M due to the deposition of grit solids in downstream treatment processes, but
5753 failure to properly size the pump would not limit the organic design capacity of the treatment
5754 plant. The Division therefore wishes to clarify that the replacement of non-wastewater lifting
5755 pumps that can affect the organic design capacity of a treatment plant (e.g., RAS pumps,
5756 waste activated sludge (WAS) pumps, etc.) is not considered an O&M activity.

5757
5758 Replacement of piping under most conditions is considered to be an O&M activity, but in some
5759 cases, the activity could directly affect the hydraulic design capacity of the treatment works.
5760 For example, replacing a force main with smaller diameter piping to increase velocities and
5761 reduce O&M could increase the head conditions placed on the pumps, therefore, reducing the
5762 hydraulic capacity of the pump. In cases where Regulation 22 applies to the treatment works
5763 (i.e., lift stations designed to receive greater than 2,000 gpd of domestic wastewater) and
5764 the Division has specific design criteria for the piping (i.e., force mains), the replacement of
5765 force main piping is not considered an O&M activity, unless the piping being replaced is an
5766 identical replacement. All other replacement piping, including those at a treatment plant,
5767 are considered O&M activities.

5768
5769 Monitoring equipment can consist of devices used to measure flow, level, and wastewater
5770 parameters; determine status and alarms conditions; and relay these conditions (i.e., PLC,
5771 SCADA, autodialer, etc.) to an operator. Some of these devices may be required to determine
5772 the applicability of the site location and design application processes (e.g., a flow meter used
5773 to measure the receiving wastewater flow) or for compliance with a treatment plant’s
5774 discharge permit (e.g., influent/effluent flow measurement). The Division would like to
5775 further clarify that the replacement of monitoring equipment required to document
5776 continued compliance with applicable site location, design, and permit conditions is not
5777 considered an O&M activity. The replacement of all other monitoring equipment (e.g., that

5778 which is used for process optimization and control and status observation) is considered an
5779 O&M activity.

5780

5781 These additional considerations do not apply if the component is an identical replacement, in
5782 which the project may be completed without Division notification or site location approval.

5783

5784 Projects Considered In-Kind Replacement

5785 To provide some flexibility for equipment or structure replacements, Section 22.2(16) of
5786 Regulation 22 states that an in-kind replacement may be a similar component as long as the
5787 proposed replacement or technology upgrades do not change the original intent of the
5788 equipment or structure being renovated, do not impact the design capacity, and do not
5789 require the application of alternate design criteria (e.g., change from chemical to ultraviolet
5790 light disinfection). Section 22.23 of Regulation 22 indicates that the Commission originally
5791 recognized replacement of equipment and structures could not always be exact makes,
5792 models, and/or sizes (dimensions and/or power), and used the word “similar” to describe
5793 replacements that are not identical to the approved equipment or structure. The Commission
5794 specifically identified the following examples that meet the intent of “similar” and may
5795 qualify as in-kind replacement.

5796

- 5797 1. Replacement of older equipment with modern versions that may be more efficient;
- 5798 2. Replacement of a single unit with a modern version at a higher rated capacity to
5799 provide a factor of safety when multiple existing units are in service; and
- 5800 3. Replacement or technology upgrades as long as the original intent of the unit process
5801 being renovated is not changed (e.g., replacing a bar screen with a fine screen).

5802

5803 The Division finds that these examples may qualify for consideration as “similar” or in-kind
5804 replacements only under specific circumstances, but the examples, as stated, do not provide
5805 sufficient information to make that determination and cannot be used by applicants as a basis
5806 for identifying approvable in-kind replacements. For this reason and per Section 22.24 of
5807 Regulation 22, the Commission added language to the in-kind replacement definition to
5808 clarify the difference between projects that require amendment of an existing site location
5809 approval, acknowledgement of the project as an in-kind replacement, or no notification to
5810 the Division. The Commission provided additional clarification that in-kind replacements are
5811 intended for a structure or piece of equipment, and not a unit treatment process that has the
5812 potential to impact the solids or liquid stream design capacities or a technology change that
5813 requires substantially different design criteria. In order for an applicant to better understand
5814 how these conditions apply to proposed equipment and structure replacements, several
5815 examples have been provided below.

5816

5817 Example No. 1 - Replacing a manual coarse bar screen with a mechanical fine screen to
5818 reduce the impacts of debris and nuisance materials on downstream treatment processes at a
5819 treatment plant may seem to qualify as an in-kind replacement, because the proposed
5820 project appears to:

5821

- 5822 1. Meet the original intent of the process treatment component to remove debris and
5823 nuisance materials prior to entering the secondary treatment process;
5824 2. Not increase the overall rated design capacity of the treatment works;
5825 3. Qualify as a similar component; and
5826 4. Be needed to assure continued compliance with the applicable site location, design,
5827 and permit conditions, including effluent limitations.

5828

5829 While these items may be true, the project could have impacts beyond the items identified
5830 above, which are as follows:

5831

- 5832 5. An increase in hydraulic loss through the screen possibly affecting the design capacity
5833 of the preliminary treatment process and accuracy of nearby equipment used for
5834 permit compliance (e.g., influent flume); and
5835 6. May require substantially different design criteria, which could include establishing
5836 the inlet channel velocity, the design maximum velocity through the screen, and
5837 required ancillary equipment.

5838

5839 In this example, sufficient information is not provided to assess whether the proposed project
5840 meets the intent of in-kind replacement. The applicant needs to provide supplemental
5841 materials with the application proving that the mechanical fine screen would not impact the
5842 solids or liquid stream design capacities and that the change could meet the requirements of
5843 the design criteria with minimal supporting information. If neither of these conditions can be
5844 met by the proposed equipment, then the project does not meet the intent of in-kind
5845 replacement, and may need to be submitted and approved through another site location
5846 application process.

5847

5848 Example No. 2 - Replacing an in-channel ultraviolet (UV) disinfection system with another in-
5849 channel type system produced by a different manufacturer. In both cases, the UV disinfection
5850 systems consist of low pressure, high intensity lamps arranged horizontally in the channel and
5851 parallel to the direction of the flow. This project appears to meet the conditions required to
5852 qualify as an in-kind replacement, with the exception of a couple of design elements that
5853 could affect the hydraulic and treatment capabilities of the overall process. In order to justify
5854 the applicability of in-kind replacement, the applicant needs to provide supplemental
5855 information indicating that the replacement disinfection system will fit within the existing
5856 channel with minor modifications, maintain the device (i.e., modulating gate, serpentine
5857 weir, etc.) used to establish the effluent level in the channel, and prove through use of a
5858 bioassay that the proposed equipment can meet the dosing requirements of the design
5859 criteria. If the replacement UV disinfection equipment requires new construction (i.e., a new
5860 building or additional channels), replacement of components beyond the lamps and
5861 associated electrical equipment and instrumentation, or substantially changes the hydraulic
5862 grade through treatment process (e.g., installation in a prefabricated, stainless steel channel
5863 above the finish floor), then the project may need to be submitted and approved through
5864 another site location application process.

5865

5866 Example No. 3 - For a lift station, replacing self-priming centrifugal pumps installed above
5867 grade with submersible pumps installed in the wet well (or vice versa for that matter). The
5868 proposed pumps will be designed for the same flow and head conditions (i.e., hydraulic
5869 capacity), and will continue to utilize the existing well wet, force main, emergency overflow
5870 storage, and standby generator. Minor piping and wet well modifications will be required to
5871 install the pumps, and a new valve vault will be installed outside the existing wet well. With
5872 the submersible pumps meeting the intent of the original equipment and maintaining the
5873 hydraulic design capacity, the project appears to meet the conditions required to qualify as
5874 an in-kind replacement. If the hydraulic capacity of the pumps is substantially different than
5875 defined in the site location approval or existing equipment/infrastructure beyond the pumps
5876 is replaced (i.e., new wet well, emergency overflow storage, or generator) and not
5877 considered an identical replacement, then the project may need to be submitted and
5878 approved through another site application process.

5879

5880 Projects Not Considered In-Kind Replacement

5881 As discussed previously, the Commission provided additional clarification through Section
5882 22.24 of Regulation 22 that in-kind replacement is not available for the following:

5883

- 5884 1. A unit treatment process that has the potential to impact the solids or liquid stream
5885 design capacity;
- 5886 2. Components that have not yet received site location and design approval; and
- 5887 3. A technology change that requires substantially different design criteria.

5888

5889 With these additions, the Division still finds that Regulation 22 needs further clarification and
5890 is silent on specific instances that do not qualify for in-kind replacements. The Division
5891 considers that the following scenarios do not meet the definition of in-kind replacement for a
5892 proposed “similar” component, but may for a proposed identical replacement of a
5893 component.

5894

- 5895 1. Any portion of a treatment plant, lift station, or interceptor that received a variance,
5896 site-specific deviation, or alternative technology acceptance that has not yet been
5897 incorporated into the design criteria;
- 5898 2. Projects that enable compliance with emerging/future applicable permit conditions,
5899 including effluent limitations that may be expressed as compliance schedules in the
5900 active discharge permit associated with the current site location approval;
- 5901 3. Projects that increase the design capacity for lift stations and interceptor sewers
5902 whether or not the applicant intends to request an increase in the overall design
5903 capacity;
- 5904 4. Projects, whether through a single component or multiple components, that enable
5905 the applicant to achieve a significant increase in the treatment plant, lift station, or
5906 interceptor design capacity that could be realized through a subsequent amendment
5907 of an existing site location application, as defined in Section 22.10 of Regulation 22;
5908 and
- 5909 5. Projects where the equipment being replaced is to be maintained for redundancy.

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22.12(1) In-Kind Replacement Submittal Requirements/Expectations

The applicant shall prepare and submit the following form and information to the Division:

- [Section 22.12 - In-Kind Replacement](#); and
- Engineering Report.

The site location application, including the necessary forms, shall be submitted electronically to the Division using the following email address: CDPHE.WQEngReview@state.co.us. The Division prefers one (1) complete electronic application, and may request a paper copy for all or part of the application, as required, to facilitate the review process. The applicant must fill in the forms completely and accurately prior to submission to the Division. All information provided on the application must conform to the requirements set forth in Regulation 22 and in this policy.

Submittal Timelines

Projects that meet the definition of in-kind replacement require the applicant to submit the site location application indicating the nature and extent of such replacement to the Division no later than 15 working days after the replacement work has been put into service. Considering the potentially complicated and abstract requests for in-kind replacement requests, the Division strongly recommends submitting the application for proposed in-kind replacements prior to construction even though Regulation 22 allows otherwise. This will help to avoid situations where the Division finds that the project does not meet the definition of in-kind replacement, and an after-the-fact site location and design application are required with no guarantee that approval can be granted.

As far as the Division’s response to the site location application, Section 22.24 of Regulation 22 indicates that the Division’s goal is to provide the owner notification within 30 working days acknowledging whether the project meets the definition of in-kind replacement. The Division interprets the 30 working days to begin once a complete application has been submitted, thus, enabling the Division to adequately assess the proposed project. If the original application does not provide sufficient information, the Division shall work expeditiously to correspond with the applicant.

22.12(1)(a) Availability of Submittal Form

As identified above, the form required for the site location application process is available on the Division’s web page. For those applicants who do not have access to the forms electronically, paper copies can be obtained through the Division’s office at 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530.

22.12(1)(b) Engineering Report

The applicant shall prepare and submit an engineering report as part of the application process for site location approval. The engineering report shall be prepared, signed, and sealed by a State of Colorado licensed professional engineer in accordance with the *Bylaws*,

5954 *Rules and Policies of the State Board of Licensure for Architects, Professional Engineers, and*
5955 *Professional Land Surveyors* issued by DORA, and shall completely address the items as
5956 addressed in each of the Sections 22.12(1)(b)(i) through 22.12(1)(b)(ii) of Regulation 22 and as
5957 guided by this policy. Additionally, the engineering report shall include all the information
5958 the Division must consider in Sections 22.3 and 22.5.

5959

5960 **22.12(1)(b)(i) Existing Domestic Wastewater Treatment Works Information**

5961 The engineering report shall include the following information pertaining to the existing
5962 treatment works where the in-kind replacement project will be performed:

5963

- 5964 (A) Identify all site location and amendment approval numbers and stipulated design
5965 approval capacities (flow and load);
- 5966 (B) Identify the name of the treatment works, whether it is a treatment plant, lift station,
5967 or interceptor; and
- 5968 (C) Provide a process description of the existing treatment works, including the original
5969 design intent of the existing equipment, structure, or component to be replaced.

5970

5971 **22.12(1)(b)(ii) In-Kind Replacement Details**

5972 The engineering report shall address and/or include the following details specific to the in-
5973 kind replacement project:

5974

- 5975 (A) Provide a description of the project including a discussion of how the in-kind
5976 replacement is required to ensure continued compliance with applicable site location,
5977 design, and permit conditions;
- 5978 (B) Date of installation of original equipment and installation date for in-kind replacement
5979 or anticipated date of construction or need;
- 5980 (C) Description of the existing and proposed equipment, structure, or component to be
5981 replaced including physical sizes, power, capacities, compliance with the design
5982 criteria, etc. The applicant shall provide the information critical to demonstrating that
5983 the proposed change meets the definition of in-kind replacement, which may include
5984 the submittal of calculations and supporting data;
- 5985 (D) Discuss the reason for the in-kind replacement, which could include such reasons as
5986 service life or equipment failure. For service life, the applicant should provide the
5987 original installation date and expected design life of the equipment;
- 5988 (E) Discuss whether the existing equipment, structure, or component received a variance,
5989 site-specific deviation, or alternative technology acceptance as part the original site
5990 location or design approval process, and if so, describe the specifics of the conditional
5991 approval; and
- 5992 (F) Identify the discharge permit number for the treatment plant or the treatment plant
5993 receiving the flow, if the application is for a lift station or interceptor sewer.

5994

5995 In cases where the above information is not adequate to determine whether the project
5996 meets the definition of in-kind replacement, the Division may require supplemental
5997 information be submitted to support the application.

5998

5999 Issuance of Site Location Decision

6000 Approval of a site location application for an in-kind replacement is issued from the Division
6001 in the form of an acknowledgement letter agreeing that the project meets the definition of
6002 in-kind replacement. If the project does not meet the definition of in-kind replacement,
6003 either because the project is an identical replacement, considered O&M, or requires
6004 submittal through another site location application process, the Division will issue a written
6005 denial letter to the applicant. The written denial will provide the reasons that the application
6006 was denied and what details the applicant may take to resolve the issue(s), if possible.

6007

6008 22.12(3) Eligibility for In-Kind Replacement

6009 All treatment plants, lift stations, and interceptor sewers that have previously received site
6010 location and design approval from the Division or were constructed prior to November 1967
6011 have the availability to replace associated appurtenances or components through Section
6012 22.12 of Regulation 22. If a treatment works or specifically the existing component being
6013 replaced does not have site location and design approval and was not constructed prior to
6014 November 1967, then the project is not eligible for in-kind replacement, and in order to
6015 obtain approval for replacement of the component, the applicant must submit the project
6016 through another site location application process.

6017

6018 22.12(4) Location of Project Relative to Existing Site Location Approval

6019 The Division considers the legal boundaries established through ownership of property or ROW
6020 agreements as a means to define the extents of a site location approval, and this information
6021 shall be used for current and future projects to determine if construction activities fall within
6022 the approved boundaries of ownership or control. Projects meeting the intent of in-kind
6023 replacement may be installed at a different location on the approved site location, but in
6024 some cases, the Division may request the applicant provide the necessary information
6025 documenting the approved legal boundaries. If a project involves replacing components where
6026 the proposed equipment or structures are to be installed on property outside the boundaries
6027 of the approved site location, then the project is not considered in-kind replacement. This
6028 type of project requires a site location application for a new treatment works through either
6029 Section 22.6, 22.8, or 22.9 of Regulation 22 and design review submittal, unless waived by the
6030 Division. Since this property has never been formally approved through a site location
6031 application, the Division is required to review specific items (e.g., odor setbacks, natural
6032 hazards, geotechnical conditions) and ensure that proper public notice and agency reviews
6033 are obtained.

6034

6035 22.12(5) Requested Increase in Design Capacity Based on In-Kind Replacement

6036 As previously discussed, the Commission added the “In-Kind Replacement” section to
6037 Regulation 22 as a means for a person to replace a piece of equipment with a similar piece of
6038 equipment that has a slightly higher rating without having to obtain site location approval,
6039 but the Commission did not intend for in-kind replacement to be used as a method of
6040 achieving a significant increase in the treatment works capacity, if that capacity can then be
6041 realized through an amendment of a site location application. With the June 14, 2020

6042 revisions to Regulation 22, the in-kind replacement definition was further modified to clarify
6043 the intent of design capacity in relation to an in-kind replacement, which included language
6044 stating that replacement or technology upgrades that do not impact the design capacity
6045 qualify as in-kind replacement. To that extent, if one or more in-kind replacements are
6046 capable of increasing the hydraulic and/or organic capacities of a treatment plant, lift
6047 station, or interceptor sewer that can then be realized through a site location amendment,
6048 the project does not meet the definition of in-kind replacement and the applicant may be
6049 required to submit a site location application in accordance with Section 22.7 of Regulation
6050 22. Since this document cannot foresee every potential in-kind replacement, the Division
6051 requests the applicant maintain open communications with the Division for assessing whether
6052 proposed in-kind replacements may be considered to provide a significant increase in
6053 capacity.

6054
6055 **22.12(6) Conformance with Current Design Criteria**

6056 Where the project meets the definition of in-kind replacement, the applicant is not required
6057 to bring the components being replaced into conformance with the requirements of the
6058 current design criteria, but may do so at the originally approved design capacity for the
6059 equipment or structures. However, if an applicant chooses to not to meet the requirements of
6060 the current design criteria and the applicant plans to perform future projects involving the
6061 proposed components, the applicant shall be required at that time to bring the components
6062 into conformance with the design criteria in order to maintain the design capacity of the
6063 treatment works or to meet the conditions of a new discharge (e.g., reclaimed water for
6064 categorical uses). Similarly, if the applicant chooses to install a replacement component that
6065 does not meet the current design criteria and, through the application review, the Division
6066 finds that the component limits the effectiveness of that unit process based on current
6067 requirements, the Division will evaluate the entire unit process associated with the in-kind
6068 application. If the Division determines that the unit process cannot meet current
6069 requirements (e.g., effluent limits) at the design capacity, one of the following steps may be
6070 taken:

- 6071
- 6072 1. The Division may conditionally acknowledge the in-kind replacement. The condition
6073 would assign a rating to the treatment process based on current requirements at the
6074 design capacity. If the treatment process limited the design capacity of the treatment
6075 works, the applicant may be required to apply for a change in design capacity of the
6076 treatment works through the site location application process under Section 22.7.
 - 6077 2. The applicant may revise the in-kind application to bring the component into
6078 conformance with current design criteria if the change will allow the component to
6079 meet current requirements (e.g., permit conditions) at the design capacity.
 - 6080 3. The applicant may withdraw the in-kind application. The Division may still pursue an
6081 evaluation of the treatment component if that component appears to hinder the
6082 treatment works ability to comply with current requirements (e.g., permit conditions)
6083 at the design capacity.
 - 6084 4. The applicant may withdraw the in-kind application and propose modifications through
6085 another site location application, such as a site location amendment.

6086
6087 In a different circumstance, the Commission clarified through Section 22.24 of Regulation 22
6088 that the replacement of components that do not require substantially different design criteria
6089 may be submitted as in-kind replacements. The statement reflects on the definitional phrase
6090 “Replacement or technology upgrades that do not change the original intent of the equipment
6091 or structure being renovated, do not impact the design capacity, and do not require the
6092 application of alternate design criteria (e.g., change from chemical to ultraviolet light
6093 disinfection) qualify as in-kind replacement.” In-kind replacements are not intended to
6094 supplant the review requirements of a site location amendment or bypass the design review
6095 process. In-kind replacements are intended to be component replacements that do not
6096 require significant design review efforts. When an in-kind application component triggers the
6097 need for a significant review against the design criteria, this need indicates that the
6098 application may not qualify as an in-kind replacement.

6099
6100 **22.12(7) Design Approval Not Required for In-Kind Replacements**
6101 Being that in-kind replacement is only available for treatment works that received site
6102 location and design approval from the Division or were constructed prior to November 1967,
6103 and that an in-kind replacement may be for a similar component as long as the proposed
6104 replacement or technology upgrade does not change the original intent of the equipment or
6105 structure being renovated, the Division expects the proposed components to meet the
6106 requirements of the original design approval. Thus, design approval pursuant to Section 22.13
6107 of Regulation 22 is not required for the replacement of components that qualify as in-kind
6108 replacement.

6109 **22.13 THE DESIGN APPLICATION PROCESS**

6110

6111 The information provided in this Section addresses the following:

6112

- 6113 ● Two-Step Design Submittal, Review and Decision Process;
- 6114 ● One-Step Design Submittal, Review and Decision Process;
- 6115 ● Self-Certification Only Processes;
- 6116 ● Non-Traditional Construction Delivery Approaches; and
- 6117 ● Phased Applications.

6118

6119 As is described in Section 22.13 of Regulation 22, in addition to obtaining site location
6120 approval, in most cases, applicants must obtain design approval from the Division prior to
6121 commencement of construction. Design applications, including self-certifications of the
6122 design, are not required for projects submitted in accordance with the following:

6123

- 6124 ● Projects that meet the definition of in-kind replacement;
- 6125 ● Demonstration projects; and
- 6126 ● Treatment works deratings to a design capacity of less than or equal to 2,000 gpd.

6127

6128 Note, once these types of projects receive site location approval, the applicant may
6129 commence construction with the exception of in-kind replacements, which may be submitted
6130 to the Division up to 15 days after placing the equipment into service.

6131

6132 For projects requiring design approval, the September 2009 revision of Regulation 22 included
6133 an exclusion (from the definition of construction) that is applicable only after site location
6134 approval has been issued allowing an applicant to perform initial site preparation work (that
6135 does not involve the treatment works components or structures), such as access roads, and
6136 site clearing and dewatering prior to approval of the design application. Construction work
6137 such as site excavation, installation of pipe galleries, etc. is not allowed under this exclusion.

6138

6139 For information regarding projects involving alternative technologies (technologies/processes
6140 not currently, specifically included in the design criteria for treatment works or through a
6141 Division issued specific technology acceptance letter), refer to the alternative technologies
6142 discussion at the beginning of this policy. All design applications must meet the requirements
6143 of the design criteria, unless a site-specific deviation is requested by the applicant and
6144 granted by the Division. Further information regarding site-specific deviations can be found in
6145 the design criteria, which is available on the following Division web page under the
6146 *Wastewater* heading: <https://cdphe.colorado.gov/facility-design-approval-policies>.

6147

6148 **Two-Step Design Application, Review and Decision Process**

6149 In addition to the site location decision, the two-step design review process involves two (2)
6150 separate applications and individual Division decisions for each application. The two-step
6151 design application process applies to the following project types:

6152

- 6153 ● New treatment plants;
- 6154 ● New or relocated outfalls;
- 6155 ● Vaults and other OWTS that meet the definition of a treatment works;
- 6156 ● Treatment plants proposing amendments to existing site location approvals; and
- 6157 ● Treatment plants seeking an increase or decrease in design capacity.

6158

6159 Submittal Requirements

6160 For the above types of projects, the applicant shall prepare and submit the following forms
6161 and information to the Division:

6162

- 6163 ● [Fee Information Request Form](#);
- 6164 ● [Wastewater Design Submittal Form](#);
- 6165 ● Process Design Report (PDR);
- 6166 ● [Process Design Report Submittal Checklist](#); and
- 6167 ● [Self-Certification Form](#).

6168

6169 The PDR application, including the necessary forms, shall be submitted electronically to the
6170 Division using the following email address: CDPHE.WQEngReview@state.co.us. The Division
6171 prefers one (1) complete electronic application, and may request a paper copy for all or part
6172 of the application, as required, to facilitate the review process. The applicant must fill in the
6173 forms completely and accurately prior to submission to the Division. The applicant is
6174 responsible for ensuring that the proposed hydraulic and organic design capacities concur
6175 with the WQPTs and any site location approval prior to submitting the application for a PDR
6176 decision. All information provided on the application must conform to the requirements set
6177 forth in Regulation 22, the design criteria, and in this policy.

6178

6179 The Division will not initiate a PDR review prior to receiving appropriate fees for the proposed
6180 project, and will not complete a design decision prior to making a site location application
6181 decision.

6182

6183 Availability of Submittal Forms

6184 As identified above, the forms required for the design review process are available on the
6185 Division's web page. For those applicants who do not have access to the forms electronically,
6186 paper copies can be obtained through the Division's office at 4300 Cherry Creek Drive South,
6187 Denver, Colorado 80246-1530.

6188

6189 Submittal Process

6190 The process is as follows:

6191

- 6192 1. After receipt of a site location approval, the applicant must submit a PDR that
6193 includes plans and specifications representing a level of design of approximately 60
6194 percent or more (i.e., based on the Statement of Basis and Purpose language provided
6195 in Section 22.23 of Regulation 22) and contains the required information as indicated
6196 in the applicable sections of the design criteria;

- 6197 2. The Division reviews the application and issues written approval of the PDR once it is
6198 determined that the application meets all of the applicable requirements of the design
6199 criteria;
- 6200 3. After the Division issues written approval of the PDR, the applicant must submit 1) a
6201 self-certification of the final design documents or 2) a final design application. In most
6202 cases, the applicant shall be required to submit a self-certification of the final plans
6203 and specifications.
- 6204
 - 6205 ● The self-certification must be presented on the appropriate form provided by
6206 the Division and signed by the design engineer. The self-certification must
6207 certify that the final plans and specifications conform to all site location and
6208 process design report conditions and conform to the requirements of the design
6209 criteria, including any deviations authorized by the Division.
 - 6210 ● At the Division's discretion or when required by the funding agency, the
6211 applicant may be required to provide a final plans and specifications submittal
6212 to the Division for review and a Division decision. The submittal must contain
6213 the required information as indicated in design criteria. The application must
6214 include the plans and specifications stamped and signed by a Colorado
6215 registered professional engineer. The submittal must be completely consistent
6216 with the information contained in the approved site location and PDR.
- 6217
- 6218 4. Prior to commencement of construction, the Division must review and make a
6219 determination on the final design self-certification or final design application. For self-
6220 certifications, the Division will review the certification and respond with an
6221 acceptance of the certification. The project may commence construction following
6222 receipt of the Division's acceptance of the self-certification. For traditional final plans
6223 and specification reviews, the project may commence construction following the
6224 Division's written approval of the final plans and specifications. For alternative
6225 delivery approaches, individual final design approval or self-certification acceptance
6226 must be issued by the Division for each phase of the project prior to commencement
6227 of construction of that project phase; and
- 6228 5. Per Regulation 22, the applicant's professional engineer, licensed to practice in the
6229 State of Colorado, must certify at the completion of construction that the treatment
6230 works was constructed according to plans, specifications and significant amendments
6231 as approved by the Division.
- 6232

6233 Please refer to Figure 13-1 found in Appendix A for a flow chart explaining the site location
6234 and design application process described above.

6235

6236 **One-Step Design Application, Review and Decision Process**

6237 In addition to the site location decision, the one-step design review process involves a
6238 separate application and Division decision. The one-step design application process applies to
6239 the following project types:

6240

- 6241 ● New lift stations; and
- 6242 ● Lift stations proposing amendments to existing site location approvals.

6243

6244 Submittal Requirements

6245 For the above types of projects, the applicant shall prepare and submit the following forms
6246 and information to the Division:

6247

- 6248 ● [Fee Information Request Form](#);
- 6249 ● [Wastewater Design Submittal Form](#);
- 6250 ● Basis of Design Report (BDR);
- 6251 ● [Basis of Design Report Submittal Checklist](#); and
- 6252 ● Final Plans and Specifications.

6253

6254 The BDR application, including the necessary forms, shall be submitted electronically to the
6255 Division using the following email address: CDPHE.WQEngReview@state.co.us. The Division
6256 prefers one (1) complete electronic application, and may request a paper copy for all or part
6257 of the application, as required, to facilitate the review process. The applicant must fill in the
6258 forms completely and accurately prior to submission to the Division. All information provided
6259 on the application must conform to the requirements set forth in Regulation 22, the design
6260 criteria, and in this policy.

6261

6262 The Division will not initiate a BDR review prior to receiving appropriate fees for the proposed
6263 works, and will not complete a decision prior to making a site location application decision.

6264

6265 Availability of Submittal Forms

6266 As identified above, the forms required for the design review process are available on the
6267 Division's web page. For those applicants who do not have access to the forms electronically,
6268 paper copies can be obtained through the Division's office at 4300 Cherry Creek Drive South,
6269 Denver, Colorado 80246-1530.

6270

6271 Submittal Process

6272 The process is as follows:

6273

- 6274 1. After receipt of site location approval, the applicant must submit an application that
6275 includes a BDR, checklist, wastewater design submittal form, and final plans and
6276 specifications. The application must contain the required information as indicated in
6277 the applicable sections of the design criteria;
- 6278 2. The Division reviews the application and issues written approval of the BDR once it is
6279 determined that the application meets all of the applicable requirements of the design
6280 criteria; and
- 6281 3. Per Regulation 22, the applicant's professional engineer, registered to practice in the
6282 State of Colorado, must certify at the completion of construction that the treatment
6283 works was constructed according to plans, specifications and significant amendments
6284 as approved by the Division.

6285

6286 **Self-Certification Only Processes**

6287 In addition to the site location decision, the self-certification only process acts in place of the
6288 final plans and specification application and Division design review process. The self-
6289 certification only process applies to the following project types:

6290

- 6291 ● Interceptors (new, capacity changes or rehabilitation).

6292

6293 **Submittal Requirements**

6294 For the above types of projects, the applicant shall prepare and submit the following forms
6295 and information to the Division:

6296

- 6297 ● [Self-certification Form](#).

6298

6299 The self-certification form shall be submitted electronically to the Division using the following
6300 email address: CDPHE.WQEngReview@state.co.us. The Division prefers one (1) complete
6301 electronic form and may request a paper copy, as required, to facilitate the process. The
6302 applicant must fill in the forms completely and accurately prior to submission to the Division.

6303

6304 The Division will not consider a self-certification form prior to making a site location
6305 application decision.

6306

6307 **Availability of Submittal Forms**

6308 As identified above, the form required for the process is available on the Division's web page.
6309 For those applicants who do not have access to the forms electronically, paper copies can be
6310 obtained through the Division's office at 4300 Cherry Creek Drive South, Denver, Colorado
6311 80246-1530.

6312

6313 **Submittal Process**

6314 The process is as follows:

6315

- 6316 1. After receipt of site location approval, the applicant must submit a self-certification
6317 that states the basis of design and final plans and specifications conform to site
6318 location approval conditions and all applicable sections of the design criteria. Site-
6319 specific deviations may be allowed through the self-certification process, and shall be
6320 evaluated on a case by case basis. If the Division determines that the site-specific
6321 deviation represents significant deviation from the design criteria, the applicant may
6322 be required to submit the project through the One-Step Design Application, Review
6323 and Decision Process.
- 6324 2. Prior to commencement of construction, the Division must review and make a
6325 determination on the final design self-certification or final design application. For self-
6326 certifications, the Division will review the certification and respond with an
6327 acceptance of the certification. The project may commence construction following
6328 receipt of the Division's acceptance of the self-certification. For traditional final plans

6329 and specification reviews, the project may commence construction following the
6330 Division’s written approval of the final plans and specifications. For alternative
6331 delivery approaches, individual final design approval or self-certification acceptance
6332 must be issued by the Division for each phase of the project prior to commencement
6333 of construction of that project phase.

6334 3. Per Regulation 22, the applicant's professional engineer, registered to practice in the
6335 State of Colorado, must certify at the completion of construction that the treatment
6336 works was constructed according to plans, specifications and significant amendments
6337 as represented to the Division through the self-certification process.

6338

6339 Non-Traditional Construction Delivery Approaches

6340 The 2003 revisions to Regulation 22 included a change to the definition of “construction” that
6341 addressed design-build projects. Per the associated Statement of Basis and Purpose language,
6342 the intent of the Commission in making this change was to specifically exclude the portions of
6343 alternative delivery, like design-build, contracts that cover site location application and
6344 design work from being included in the definition of “construction”. It is further clarified that
6345 the Commission still intends that no actual erection or physical placement of materials,
6346 equipment, piping, earthwork or buildings (that are to be part of the treatment works) be
6347 commenced until the site location application, the respective portions of the design (to be
6348 constructed), and self-certification or final plans and specifications have been approved
6349 and/or acknowledged by the Division.

6350

6351 Phased Applications

6352 At times, the Division receives projects requesting phased construction. The phasing requests
6353 typically come in three forms: bid packages, timed, and capacity. The Division does not offer
6354 phased site location applications or design capacities, but will consider accepting multiple,
6355 phased design and self-certification reviews and decisions.

6356

- 6357 ● Bid packages: Applicants typically request bid package phasing for large projects
6358 where the applicant intends to issue/bid multiple complete design plans and
6359 specifications for various phases of a single project. For this type of project, the
6360 Division offers the option to make a decision on each final design application or self-
6361 certification for each bid package phase.
- 6362 ● Timed: Applicants typically request timed phasing when some external force (i.e.,
6363 weather conditions or funding) requires the applicant to begin construction of specific
6364 facilities to meet a critical deadline. For this type of project, the Division offers the
6365 option to receive final design approvals for each project phase as long as the project
6366 can be clearly and definitively broken into phases.
- 6367 ● Capacity: Applicants often request the Division to provide the capacity phasing for
6368 projects expected to expand over the life of the construction process or within a few
6369 years of construction. The Division does not have the ability to track incremental
6370 capacity phasing of projects, ~~considers capacity phasing to sidestep the site location~~
6371 ~~application process~~, and expects a single project to provide the approved site location

6372 capacity. The Division ~~does not provide~~ will consider construction capacity phasing of
6373 projects within the following guidelines.

- 6374 ○ All division reviews and actions are for the full system capacity (e.g., water
6375 quality planning targets, site location application, process design report,
6376 discharge permit).
- 6377 ○ Site location application must demonstrate reasonable estimates for the
6378 identified planning capacity (e.g., planning period service area definition,
6379 regional planning authority area, existing capacity if a new process).
- 6380 ○ Site location application must include an operational plan with adequate
6381 management plan for construction staging/phasing required with measurable
6382 and definitive guidelines for constraining conditions (e.g., critical milestones,
6383 funding plans, estimated time to implement additional phases).
- 6384 ○ Process design must show capability to receive full flow and/or pollutant load
6385 while meeting the water quality planning target(s), as applicable.
- 6386 ○ Process design must show redundancy and resiliency requirements will be met
6387 for each phase of constructed treatment capacity, including the initial phase.
- 6388 ○ Final design documents (plans and specifications) or self-certification
6389 documents for full design capacity must be provided by the applicant,
6390 consistent with the two-step process above.
- 6391 ○ Initial construction must commence before expiration of the site location
6392 approval. Completion of construction of adequate capacity must finish by
6393 required dates in a permit compliance schedule to meet permit effluent limits,
6394 if applicable.
- 6395 ○ The applicant must notify the division when initiating a new construction
6396 phase, providing a proactive indication that the next phase is being constructed
6397 and including certification that the approved design is not changing.
- 6398 ○ Another set of site location application and design review steps (i.e., SA
6399 amendment, process design, final design) will be required if the treatment
6400 process design changes at any phase.
- 6401 ○ The applicant must provide to the division the required “construction
6402 completed as approved” notice for each construction phase, to provide
6403 confirmation of construction at that constructed treatment capacity.
- 6404 ○ In all phases, owner of the domestic wastewater treatment works is responsible
6405 for proper process design, construction of capacity, and operation and
6406 maintenance of the facility to meet permit effluent requirements.

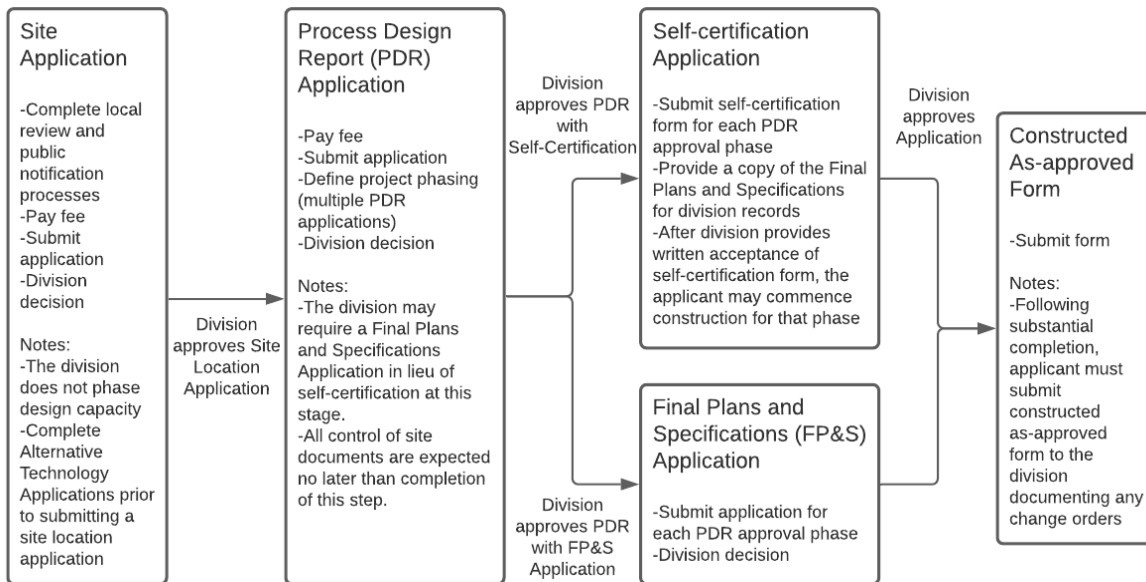
6407
6408 Under unusual circumstances, an applicant may also request phased self-certification for
6409 interceptor pipelines that require extended property and easement negotiations with multiple
6410 parties. The site location application is intended to demonstrate control of the entire site
6411 prior to Division approval, but the Division will consider extenuating circumstances. If
6412 allowed, the Division must condition the site location approval so that the applicant provides
6413 multiple, phased self-certification final plans and specification forms with proof of ownership
6414 prior to commencement of construction for that phase. The phasing plan and schedule must
6415 be proposed with the site location application.

6416
6417 The Division handles site location applications for alternative delivery projects in the same
6418 way that site location applications for traditional delivery projects are handled - except for
6419 the requirement to notify the Division of the proposed phasing. However, the design
6420 submittal, review and approval processes are handled differently. For alternative delivery
6421 system projects that require phasing, the Division will issue phased approvals for both the
6422 two-step and one-step processes to enable the applicant to commence with construction as
6423 each phase receives design approval. In both cases, the applicant must include the proposed
6424 project phasing in the site location application and design submittals. Each design submittal
6425 must include all information for that phase. If a project falls under the two-step design
6426 process, PDR approval (for the entire project) is required; it is the final design submittals or
6427 self-certification and approvals/acknowledgment that can be done with the phased approach.

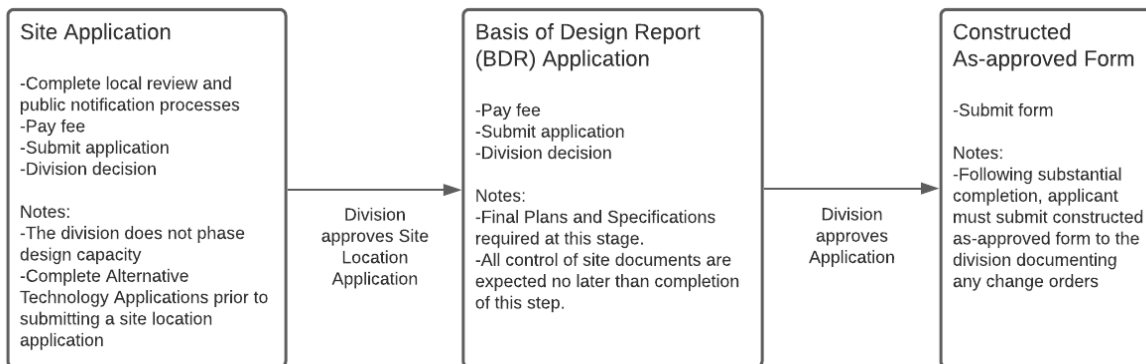
6428
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APPENDIX A SITE LOCATION AND DESIGN APPLICATION FLOW CHART

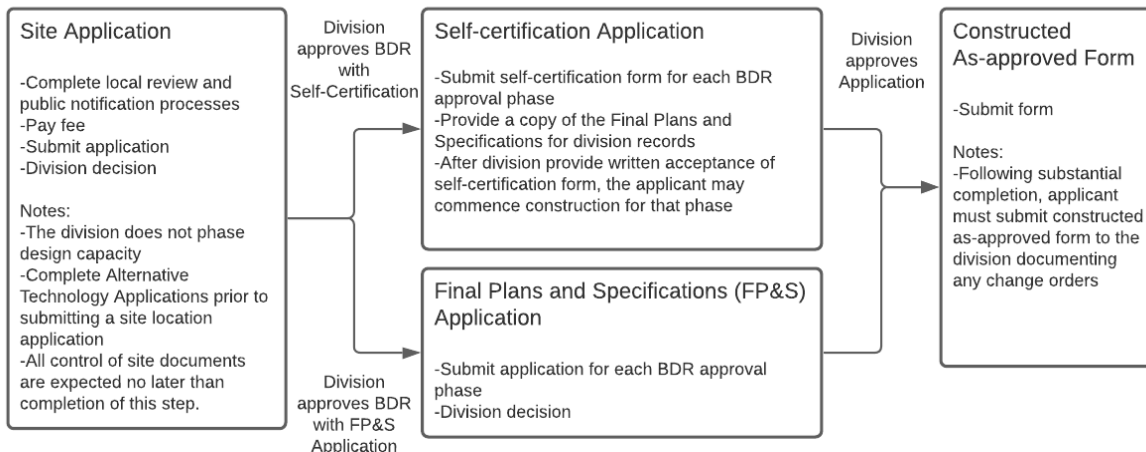
Two-step Design Submittal Process



One-step Design Submittal Process



Self-certification Only Submittal Process



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 6433

**APPENDIX B
 COUNTY AND 208 AGENCY LIST**

County	Local Public Health Agency	208 Designated Planning Agency
Adams	Tri-County Health Department	
Alamosa	Alamosa County Public Health Department	
Arapahoe	Tri-County Health Department	
Archuleta	San Juan Basin Public Health	
Baca	Baca County Public Health Agency	
Bent	Bent County Public Health	
Boulder	Boulder County Public Health	
Broomfield	Broomfield Public Health and Environment	
Chaffee	Chaffee County Environmental Health Department	
Cheyenne	Cheyenne County Public Health Agency	
Clear Creek	Clear Creek County Public and Environmental Health	
Conejos	Conejos County Public Health & Nursing Service	
Costilla	Costilla County Public Health Agency	
Crowley	Otero County Health Department	
Custer	Custer County Public Health Agency	
Delta	Delta County Department of Health and Human Services	
Denver	Denver Environmental Health	
Dolores	Dolores County Public Health Agency	
Douglas	Tri-County Health Department	
Eagle	Eagle County Environmental Health Department	Northwest Colorado Council of Governments
El Paso	El Paso County Public Health	Pikes Peak Area Council of Governments
Elbert	Elbert County Health and Environment	
Fremont	Fremont County Environmental Health Department	
Garfield	Garfield County Public Health Agency	
Gilpin	Gilpin County Public Health Agency	
Grand	Grand County Public Health	Northwest Colorado Council of Governments
Gunnison	Gunnison County Public Health	
Hinsdale	Hinsdale County Environmental Health Department	
Huerfano	Las Animas-Huerfano Counties District Health Department	
Jackson	Routt County Environmental Health	Northwest Colorado Council of Governments
Jefferson	Jefferson County Public Health	
Kiowa	Prowers County Public Health and Environment	
Kit Carson	Kit Carson County Environmental Health Department	
La Plata	San Juan Basin Health Department	
Lake	Lake County Public Health Agency	
Larimer	Larimer County Health Department	North Front Range Water Quality Planning Association
Las Animas	Las Animas-Huerfano Counties District Health Department	

County	Local Public Health Agency	208 Designated Planning Agency
Lincoln	Lincoln County Department of Public Health	
Logan	Northeast Colorado Health Department	
Mesa	Mesa County Health Department	
Mineral	Mineral County Public Health Agency	
Moffat	Northwest Colorado Health	
Montezuma	Montezuma County Environmental Health Department	
Montrose	Montrose County Environmental Health Department	
Morgan	Northeast Colorado Health Department	
Otero	Otero County Health Department	
Ouray	Ouray County Environmental Health Department	
Park	Park County Environmental Health Department	Pikes Peak Area Council of Governments
Phillips	Northeast Colorado Health Department	
Pitkin	Pitkin County Environmental Health Department	Northwest Colorado Council of Governments
Prowers	Prowers County Public Health and Environment	
Pueblo	Pueblo City-County Health Department	Pueblo Area Council of Governments
Rio Blanco	Rio Blanco County Department of Public Health and Environment	
Rio Grande	Rio Grande County Public Health Agency	
Routt	Routt County Environmental Health	
Saguache	Saguache County Public Health Agency	
San Juan	San Juan County Public Health Service	
San Miguel	San Miguel County Environmental Health Department	
Sedgwick	Northeast Colorado Health Department	
Summit	Summit County Environmental Health Department	Northwest Colorado Council of Governments
Teller	Teller County Environmental Health Department	Pikes Peak Area Council of Governments
Washington	Northeast Colorado Health Department	
Weld	Weld County Department of Public Health & Environment	North Front Range Water Quality Planning Association
Yuma	Northeast Colorado Health Department	

6434

6435 **List of Management Agencies**

6436

6437

- Bear Creek Watershed Association
- Chatfield Watershed Authority
- Cherry Creek Basin Water Quality Authority
- Upper Clear Creek Watershed Association
- Upper South Platte River Protection Association

6438

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Note, this list is not all inclusive, and the applicant should contact the Division to ensure that the appropriate review agencies have been identified for the proposed project.

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APPENDIX C

HISTORICAL LIFT STATION AND INTERCEPTOR INTERIM IMPLEMENTATION

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Introduction

The Division understands some number of lift stations and interceptor sewers exist throughout the state that have been constructed either without site location or design approval or where these documents cannot be found by the Division or the owner. At this time, there is not adequate information to determine how many lift stations and interceptors lack documentation of site location approval, how many of those were the result of lost documentation, or how many require upgrades or improvements. The Division also recognizes that in some cases the infrastructure was not built by the current owner. Nonetheless, where documentation cannot be found, the Division assumes site location application and design review did not occur. The Division also recognizes that although site location application and design review may not have occurred, the infrastructure may have been operated for years without failure. However, since a review may not have occurred to confirm appropriate local planning and reviews, appropriate site location, and appropriate construction standards, lift stations and interceptors constructed without site location and design approval may pose a risk to public health and the environment, and must be evaluated for the risk it may present.

The Division attempted to include a pathway to addressing historical infrastructure that cannot demonstrate site location and design approval during the stakeholder process leading up to the 2020 Regulation 22 rulemaking hearing. Despite efforts during the stakeholder process, full consensus was not reached amongst the stakeholders on the proposed path forward. Some stakeholders objected to the retroactive application of the site location application requirements for existing infrastructure that has been safely operated for a long period of time where no construction or expansion is planned. During the 2020 Regulation 22 rulemaking, the parties abandoned the regulatory pathway and instead opted to provide additional time to collect more information that would inform a permanent approach for addressing historical infrastructure in the next Regulation 22 triennial hearing. While parties work together to develop a permanent approach, the Division and stakeholders also committed to developing an interim policy for use between the effective date of this policy and when the permanent solution can be implemented.

In developing this interim policy, the Division emphasizes that this is not a permanent deferral of the site location and design approval requirements. The Division finds the site location and design application process is imperative to support and encourage local review processes, to support and encourage the 208 planning process, to ensure proper control of site location, and to protect public health and the environment. Under this interim policy, owners are not relieved from the requirement to submit for site location and design approval. However, under this interim policy and due to resource limitations for both the Division and owners of historical infrastructure, the Division will not actively pursue site location and design application submittal requirements where owners can demonstrate the historical infrastructure adequately meets minimum requirements. The Division finds that minimum requirements means the infrastructure protects public health and the environment, is in good

6491 operating condition and is properly designed and constructed including proper alarms and
6492 redundancies.

6493

6494 Under this interim policy, the Division will not actively pursue site location and design
6495 application submittal requirements for all historical infrastructure. Instead, the Division will
6496 prioritize infrastructure based on the level of risk it poses to public health and the
6497 environment. For the purposes of this interim policy, the Division is defining historical
6498 infrastructure as existing lift stations and interceptor sewers that were constructed prior to
6499 September 30, 2009. This date is selected based on the effective date of the previous version
6500 of Regulation 22.

6501

6502 The Division anticipates that historical infrastructure will be discovered primarily through
6503 three (3) pathways:

6504

- 6505 1. When new infrastructure is connecting to existing, historical infrastructure (e.g.,
6506 newly proposed lift station that discharges to an existing, unapproved lift station);
- 6507 2. When a sanitary sewer overflow (SSO) discharge is reported to the Division that
6508 resulted from historical infrastructure; and
- 6509 3. When the Division conducts a compliance evaluation inspection (CEI).

6510

6511 This interim policy outlines these three (3) anticipated pathways under which the Division
6512 may learn of historical infrastructure. These three (3) pathways and conditions that may
6513 result in a referral to the site location and design application process are discussed in more
6514 detail below. The Division will use this interim policy to evaluate historical infrastructure
6515 when deciding to require site location and design approval. Once discovered and referred to
6516 the site location and design application process, the Division expects the owner to complete
6517 the review process and install and properly operate any improvement projects. Failure to
6518 make progress or complete any of these requirements may result in a referral to
6519 enforcement. The Division will use its existing escalation practices to determine if or when to
6520 refer to enforcement. This interim policy does not limit or preclude the Division from
6521 pursuing possible enforcement options concerning any violations of Regulation 22 or of the
6522 *Colorado Water Quality Control Act*. If referred to enforcement, the Division will evaluate
6523 the facts associated with any alleged violation(s) and if a formal enforcement action is
6524 deemed necessary, the Division may issue a Notice of Violation or Cease and Desist Order that
6525 may include the assessment of penalties. The Division will utilize the existing *Clean Water
6526 Program Enforcement Management System* dated May 2016 or most recent version when
6527 developing an enforcement action.

6528

6529 **Historical Infrastructure Referral Based On Connecting New Infrastructure**

6530 During this interim period, the Division may become aware of historical infrastructure when
6531 newly proposed or expanding infrastructure will be connecting to historical infrastructure.
6532 This scenario can occur frequently. For example, when an applicant proposes a new lift
6533 station that requires site location and design approval, and the new lift station discharges to
6534 an existing lift station or interceptor that cannot demonstrate site location approval. When

6535 these situations arise, the Division's practice has required the owner of the receiving
6536 infrastructure to obtain site location and design approval concurrent with making a decision
6537 on the newly proposed infrastructure. The Division recognizes that this past practice may not
6538 be necessary in every case. If an applicant wishes to postpone the site location and design
6539 application process for historical infrastructure under this interim process, the applicant must
6540 provide information demonstrating the historical infrastructure is adequately designed and
6541 operated to protect public health and the environment. This may put additional onus upon
6542 the applicant and/or the owner of the historical receiving infrastructure to demonstrate the
6543 historical receiving infrastructure has adequate capacity. To be adequate, capacity must
6544 include proper emergency infrastructure and adequate redundancy sized to convey both the
6545 existing and future flows from the existing service area and the newly proposed/expanding
6546 service area. If information is not provided or if information provided identifies design
6547 deficiencies, then the historical infrastructure will be referred to the site location and design
6548 application process to implement corrections or improvements.

6549

6550 When new or expanding infrastructure comes in for site location application review, the
6551 Division will evaluate receiving historical infrastructure for referral to the site location and
6552 design application process based on the following criteria:

6553

6554 1. Reliability. When evaluating infrastructure, Division staff will consider the condition of
6555 the infrastructure, maintenance records, associated SSO records and overall design of
6556 the historical infrastructure. The Division will also consider the items below when
6557 referring historical infrastructure to the site location and design application process.

6558

6559 ● Degree of hydraulic loading as compared to hydraulic capacity. A critical
6560 parameter considered for the reliability of an existing lift station and
6561 interceptor is the degree of hydraulic loading as it relates to the
6562 infrastructure's design capacity (i.e., firm pumping capacity for a lift station or
6563 pipe diameter and slope for an interceptor). Section 22.5(1)(b) of Regulation 22
6564 specifies the Division must consider and ensure that the receiving treatment
6565 works will not be overloaded when connecting new or expanding lift stations or
6566 interceptors. As a result, the Division expects applicants to provide an analysis
6567 with the site location application demonstrating that the receiving treatment
6568 works, including any historical lift stations or interceptors, will not be
6569 overloaded or cause overloading when connecting the new or expanding
6570 infrastructure. In the event the analysis finds downstream historical
6571 infrastructure can accept the additional flow (and meets other criteria in this
6572 interim policy), then the historical infrastructure's site location and design
6573 application process may be deferred to a later date. However, the Division
6574 recognizes there are different planning periods for different infrastructure
6575 (e.g., interceptors may be constructed for a 50-year build out versus a lift
6576 station may be phased and only constructed for an initial 10-year planning
6577 period). In addition, the service area growth does not occur immediately upon
6578 putting new or expanding infrastructure into service. In cases such as these,

6579 the Division expects the applicant to provide a monitoring plan to track
6580 infrastructure hydraulic loading compared to capacity and a plan for expanding
6581 and/or improving the historical infrastructure when it becomes required. Any
6582 historical infrastructure that is found to be overloaded due to the addition of
6583 the new or expanding infrastructure cannot delay submitting a site location and
6584 design application. The historical infrastructure must be expanded and/or
6585 improved in order to safely convey the additional wastewater. As a result of
6586 the impending improvement project, the historical lift station or interceptor
6587 will be required to submit a site location and design application and obtain
6588 approval. The Division expects the improvements project will be installed and
6589 properly operated prior to accepting additional wastewater from new or
6590 expanding infrastructure.

6591
6592 In addition to reviewing receiving collection system infrastructure, the Division
6593 will also review the capacity of the receiving treatment plant. While the
6594 receiving treatment plant loadings (organic and hydraulic relative to site
6595 approved capacities) are a key consideration when reviewing site location
6596 applications for new or expanding infrastructure, the Division does not
6597 anticipate that the receiving treatment plant loadings will be a key
6598 consideration when evaluating historical lift stations and interceptors since
6599 they are already constructed and connected. However, in the event the
6600 receiving treatment plant is overloaded or experiencing effluent violations, the
6601 Division may require site location and design approval for historical
6602 infrastructure. The Division anticipates a permittee may be required to obtain
6603 site location and design approval for historical infrastructure in the event the
6604 Division were to issue an enforcement order to the permittee. The Division will
6605 utilize existing enforcement policies, procedures and enforcement discretion
6606 (if needed) when prioritizing enforcement cases and issuing enforcement
6607 actions.

6608
6609 • Condition of infrastructure. To help the Division determine if the condition of
6610 the infrastructure is a possible issue, the Division expects owners will provide
6611 pictures, maintenance records and replacement history to Division staff, if
6612 requested. The Division expects owners to perform maintenance according to
6613 the treatment works' O&M schedule. Infrastructure that is in good condition
6614 and has maintenance records demonstrating regular and proactive maintenance
6615 history may be simply documented by Division staff and allowed to continue in
6616 status quo mode under this interim practice.

6617
6618 However, infrastructure where maintenance has been deferred or is in poor
6619 condition and requires construction to remedy may represent an unacceptable
6620 risk for failure and risk to public health and the environment. In cases such as
6621 these, the Division will require historical infrastructure to complete the site
6622 location and design application process to implement necessary corrections.

6623 Constructing and implementing improvements for historical infrastructure may
6624 be required prior to completing construction that connects newly proposed or
6625 expanding infrastructure.

6626
6627 ● Record of SSOs. In the event the Division finds the historical infrastructure has
6628 a record of SSOs at the treatment works, the Division will consider the cause,
6629 frequency, and severity of the spills.

6630
6631 Historical infrastructure that has a record(s) of associated SSOs will be
6632 evaluated carefully for the conditions causing the SSO. In some cases, an SSO
6633 may occur despite regular maintenance and sound design. Conditions leading to
6634 an SSO will be evaluated with the understanding that some causes of SSOs are
6635 outside of the owner's control (e.g., contractor drilling into a force main or a
6636 person illegally disposing of debris to the sewer). Lift stations that are well
6637 maintained and designed and have suitable emergency facilities and
6638 operational plans might continue in status quo under this interim policy despite
6639 an SSO. However, when reasonable design conditions could have prevented the
6640 SSO, the lift station or interceptor will be required to obtain approval through
6641 the site location and design application process. Following approvals, the
6642 owner is expected to complete the process by installing and properly operating
6643 any improvements projects. As the severity of SSOs increase (e.g., frequency,
6644 volume of spill), the Division will be more likely to require corrections or
6645 upgrades to the treatment works through the site location and design
6646 application process.

6647
6648 2. Location of the infrastructure relative to habitable structures or waterways that may
6649 endanger public health and the environment. Due to the immediate risk to public
6650 health and the environment, if a spill were to enter a waterway or come close to a
6651 habitable structure, all historical infrastructure will be reviewed considering its
6652 distance to waterways and habitable structures. The Division will consider the location
6653 of historical infrastructure relative to floodways, 100-year flood plains, and storm
6654 drains for possible referral to the site location and design application process.
6655 Historical infrastructure located near these features will trigger a review of the site
6656 topography and any emergency facilities to evaluate the likelihood of a spill entering a
6657 waterway or storm drain.

6658
6659 As the design capacity (i.e., pump sizing/pumping capacity or pipeline diameter) of
6660 infrastructure increases, the potential level of risk to public health increases
6661 proportionally; therefore, the size of infrastructure will be evaluated when
6662 considering the location of the historical infrastructure relative to the waterway. For
6663 example, as the design capacity of the lift station or interceptor increases, the (1)
6664 distance from waterways and habitable structures or (2) design features that mitigate
6665 against possible spills must increase proportionally.

6666

6667 Infrastructure may be referred to the site location and design application process
6668 under conditions where infrastructure does not have adequate protections against
6669 flooding, including accessibility and where adequate onsite emergency overflow
6670 prevention strategies have not been provided.

6671
6672 3. Adequacy of emergency facilities and the emergency response plan. Historical lift
6673 station infrastructure will be evaluated based on the emergency provisions at the
6674 station as well as the treatment works' emergency operations plan for responding to
6675 emergency situations at the station. The Division expects that emergency
6676 infrastructure include redundant pumps, backup power, adequate overflow storage
6677 capacity (evaluated at peak hour flow) and emergency alarms/notification.

6678
6679 Redundancy is a key component to successfully dealing with emergency situations and
6680 avoiding a potential SSO. The Division expects lift stations to have adequate
6681 redundancy in order to provide reliable operation and prevent spills. Lift stations are
6682 expected to have redundant pumps, redundant power and controls (auto/hands/off)
6683 and alarms. Pumping redundancy means full redundancy is provided when the largest
6684 pump is out of service. Power redundancy means a backup electrical feed from an
6685 independent grid, or the station has an onsite generator. Where adequate emergency
6686 storage and emergency plans are in place, the Division may consider portable
6687 generators or portable pumping for redundant power supply.

6688
6689 Emergency storage is another key component for avoiding potential spills during an
6690 emergency at a lift station. The Division expects lift stations to have emergency
6691 storage in the form of storage in the wetwell, storage in an onsite basin, and/or
6692 storage within the sewer piping upstream of the wetwell. Storage within the pipeline
6693 will be evaluated on a case by case basis based on upstream buildings and
6694 infrastructure. Evaluation of emergency storage may be based on one or all of these
6695 components and will be evaluated against the owner's emergency response plan,
6696 including the response time needed for an operator to receive the alarm, arrive on
6697 site, troubleshoot the situation and install a permanent or temporary solution prior to
6698 an overflow occurring.

6699
6700 Infrastructure may be referred to the site location and design application process
6701 under conditions where infrastructure does not have adequate redundancy or
6702 emergency infrastructure.

6703
6704 4. Odor complaints. Infrastructure with odor complaints may be evaluated for referral to
6705 the site location and design application process. The Division will utilize Air Quality
6706 Control Commission *Regulation Number 2 Odor Emission* when evaluating odor
6707 complaints and when considering if the addition of odor control is required. When
6708 construction is required to address odor emission issues, the Division may refer the
6709 infrastructure to the site location and design application process.

6710

6711 As discussed previously, the Division's priority is the protection of public health and the
6712 environment. When applicants submit a site location and design application for new or
6713 expanding infrastructure, the Division will evaluate all treatment works receiving the new or
6714 increased flow and loads. During this evaluation, historical infrastructure will be evaluated
6715 for its ability to protect public health and the environment utilizing the above criteria. Where
6716 infrastructure is determined deficient in any of these areas, the Division may require the
6717 owner complete the site location and design application process, obtain approval and install
6718 and operate necessary improvements. Failure to obtain approvals or construct necessary
6719 improvements may result in formal enforcement action from the Division.

6720

6721 **Historical Infrastructure Referral Based On Sanitary Sewer Overflow**

6722 During this interim period, the Division may become aware of historical infrastructure through
6723 a SSO reported to the Department's 24-hour Environmental Release/Incident Reporting call
6724 line (1-877-518-5608) or other reporting mechanisms. The Division will utilize its existing
6725 policies and procedures when responding to spill reports and this interim policy is not
6726 intended to interfere with spill response policies or practices in any way. When the Division
6727 finds that the SSO has occurred from infrastructure that requires site location and design
6728 approval but approval cannot be demonstrated, the Division may require the owner to obtain
6729 the required approvals. When evaluating historical infrastructure for referral to the site
6730 location and design application process, the Division will consider the cause for the SSO,
6731 whether a natural hazard contributed to the spill, the severity of the spill (number/frequency
6732 of spills and quantity of sewage spilled) and the proximity of the spill to surface water.

6733

6734 1. Cause of spill. When evaluating historical infrastructure for referral to the site
6735 location and design application process, the Division will carefully evaluate the
6736 conditions causing the SSO. In some cases, an SSO may occur despite regular
6737 maintenance and sound design. Conditions leading to an SSO will be evaluated
6738 understanding that some causes of SSOs are outside of the owner's control. Some
6739 examples include a contractor drilling into a force main or a person illegally disposing
6740 of debris to the sewer.

6741

6742 Lift stations that are well maintained and designed and have suitable emergency
6743 facilities and operational plans might continue in status quo under this interim policy
6744 despite an SSO. However, when reasonable design could have prevented the SSO, the
6745 lift station or interceptor will be required to obtain approval through the site location
6746 and design application process. Following approvals, the owner is expected to install
6747 and properly operate any improvements projects. As the severity of SSOs increase
6748 (e.g., frequency, volume of spill), the Division will be more likely to require
6749 corrections or upgrades to the treatment works through the site location and design
6750 application process.

6751

6752 Another potential cause of spills could include a severe natural disaster such as the
6753 floods of 2013 where widespread damage to infrastructure was sustained due to a
6754 flood event greater than the 100-year flood design standard. In cases such as these,

6755 the Division may consider the conditions of the natural disaster when determining
6756 whether the infrastructure must be reviewed through the site location and design
6757 application process.

6758

6759 **Historical Infrastructure Referral Based On Compliance Evaluation Inspection**

6760 During this interim period, the Division may become aware of historical infrastructure through
6761 the CEI process. The CEI process is a critical component of the Division's purpose to protect
6762 public health and the environment. During the CEI process, the Division will evaluate lift
6763 station and interceptor infrastructure based on the risk this infrastructure presents for
6764 causing a sanitary sewer overflow (SSO) and creating a possible danger for public health and
6765 the environment. When the Division's evaluation determines the risk is too high, the Division
6766 will require corrections or upgrades to infrastructure and may require the owner to complete
6767 the site location and design application process for the deficient infrastructure. Division staff
6768 will evaluate infrastructure for deficiencies and referral to the site location and design
6769 application process based on the following criteria:

6770

6771 1. Reliability. When evaluating infrastructure, Division staff will consider the condition of
6772 the infrastructure, maintenance records, associated SSO records and design of the
6773 historical infrastructure. The Division will consider the items below when referring
6774 infrastructure to the site location and design application process. Generally, the
6775 infrastructure will be referred when the infrastructure requires construction to correct
6776 a deficiency identified during the CEI evaluation process.

6777

6778 ● Condition of infrastructure. To help the Division determine if the condition of
6779 the infrastructure is a possible issue, the Division expects owners will provide
6780 maintenance and replacement history available to the inspector, if requested.
6781 The Division expects owners to perform maintenance according to the
6782 treatment works' O&M schedule. Infrastructure that is in good condition and
6783 has maintenance records demonstrating regular and proactive maintenance
6784 history may be simply documented by Division staff and allowed to continue in
6785 status quo mode under this interim practice.

6786

6787 However, infrastructure where maintenance has been deferred or is in poor
6788 condition and requires construction to remedy may represent an unacceptable
6789 risk for failure and risk to public health and the environment. In cases such as
6790 these, the CEI process may refer the historical infrastructure to the site
6791 location and design application process to implement necessary corrections.

6792

6793 ● Record of SSOs. In the event the Division finds the infrastructure has a record
6794 of SSOs at the treatment works, the Division will consider the cause, frequency
6795 and severity of the spills. For example, a lift station with only one (1) spill that
6796 resulted in a small quantity of sewage spilled to a dry, contained area will not
6797 prioritize as highly as a lift station that has record of multiple spills, a lift

6798 station that reported a significant volume of sewage spilled, and any event that
6799 impacted waters of the state.

6800
6801 Historical infrastructure that have record(s) of associated SSOs will be
6802 evaluated carefully for the conditions causing the SSOs. In some cases, an SSO
6803 may occur despite regular maintenance and sound design. Conditions leading to
6804 an SSO will be evaluated understanding that some causes of SSOs are outside of
6805 the owner's control (e.g., contractor drilling into a force main or a person
6806 illegally disposing of debris to the sewer). Lift stations that are well maintained
6807 and designed and have suitable emergency facilities and operational plans
6808 might continue in status quo under this interim policy despite an SSO.
6809 However, when reasonable design conditions could have prevented the SSO,
6810 the lift station or interceptor will be required to obtain approval through the
6811 site location and design application process. Following approvals, the owner
6812 will be expected to complete the process by installing and properly operating
6813 any improvements. The Division will review historical infrastructure on a case
6814 by case basis. As the severity of SSOs increase (e.g., frequency, volume of
6815 spill), the Division will be more likely to require corrections or upgrades to the
6816 treatment works through the site location and design application process.

6817
6818 ● Degree of hydraulic loading as compared to hydraulic capacity. A critical
6819 parameter considered for the reliability of an existing lift station and
6820 interceptor is the degree of hydraulic loading as it relates to the
6821 infrastructure's design capacity (i.e., firm pumping capacity for a lift station or
6822 pipe diameter and slope for an interceptor). When reviewing hydraulic loading
6823 of the historical lift station or interceptor, the Division may use multiple tools
6824 including an evaluation of the pump runtime, an evaluation of the electricity
6825 draw, and an evaluation of the service area (e.g., number of vacant lots
6826 relative to occupied lots). Any lift stations that are running at or near 100
6827 percent of the time may be overloaded and require expansion. In these
6828 situations, the CEI findings may require improvements through site location and
6829 design application process.

6830
6831 Staff may also consider the frequency of alarm conditions at a lift station.
6832 Highly frequent and consistent alarms over several months of time may
6833 indicate a significant issue that must be addressed. Alarms such as pump
6834 overload or high level alarm (above normal high level) may be indicative of
6835 necessary capital improvements to the treatment works through the site
6836 location and design application process.

6837
6838 The Division does not anticipate that the receiving treatment plant loadings
6839 will be a key consideration when evaluating historical lift stations and
6840 interceptors to the site location and design application process. The Division
6841 expects the infrastructure would have other deficiencies to be referred to the

6842 site location and design application process. However, in the event the
6843 receiving treatment plant is overloaded or experiencing significant effluent
6844 violations, the Division may require site location and design approval for
6845 historical infrastructure. The Division anticipates a permittee may be required
6846 to obtain site location and design approval for historical infrastructure in the
6847 event an enforcement order were issued to the permittee. The Division will
6848 utilize existing enforcement policies, procedures and enforcement discretion
6849 (if needed) when prioritizing enforcement cases and issuing enforcement
6850 actions.

6851
6852 2. Location of the infrastructure relative to habitable structures or waterways that may
6853 endanger public health and the environment. Due to the immediate risk to public
6854 health and the environment, if a spill were to enter a waterway or come close to a
6855 habitable structure, all historical infrastructure will be reviewed considering its
6856 distance to waterways and habitable structures. The Division will consider the location
6857 of historical infrastructure relative to floodways, 100-year flood plains, and storm
6858 drains for possible referral to the site location and design application process.
6859 Historical infrastructure located near these features will trigger a review of the site
6860 topography and any emergency facilities to evaluate the likelihood of a spill entering a
6861 waterway or storm drain.

6862
6863 As the design capacity (i.e., pump sizing/pumping capacity or pipeline diameter) of
6864 infrastructure increases, the potential level of risk to public health increases
6865 proportionally; therefore, the size of infrastructure will be evaluated when
6866 considering the location of the historical infrastructure relative to the waterway. For
6867 example, as the design capacity of the lift station or interceptor increases, the (1)
6868 distance from waterways and habitable structures or (2) design features that mitigate
6869 against possible spill must increase proportionally.

6870
6871 Infrastructure may be referred to the site location and design application process
6872 under conditions where infrastructure does not have adequate protections against
6873 flooding, including accessibility and where adequate onsite emergency overflow
6874 prevention strategies have not been provided.

6875
6876 3. Adequacy of the emergency facilities and the emergency response plan. Historical lift
6877 station infrastructure will be evaluated based on the emergency provisions at the
6878 station as well as the treatment works' emergency operations plan for responding to
6879 emergency situations at the station. The Division expects that emergency
6880 infrastructure include redundant pumps, backup power, overflow storage capacity
6881 (evaluated at peak hour flow) and emergency alarms/notification.

6882
6883 Redundancy is a key component to successfully dealing with emergency situations and
6884 avoiding a potential SSO. The Division expects lift stations to have adequate
6885 redundancy in order to provide reliable operation and prevent spills. Lift stations are

6886 expected to have redundant pumps, redundant power and controls (auto/hands/off) or
6887 alarms. Pumping redundancy means full redundancy is provided when the largest pump
6888 is out of service. Power redundancy means a backup electrical feed from an
6889 independent grid, or the station has an onsite generator. Where adequate emergency
6890 storage and emergency plans are in place, the Division may consider portable
6891 generators or portable pumping for redundant power supply.

6892
6893 Emergency storage is another key component for avoiding potential spills during an
6894 emergency at a lift station. The Division expects lift stations to have emergency
6895 storage in the form of storage in the wetwell, storage in an onsite basin, and/or
6896 storage within the sewer piping upstream of the wetwell. Storage within the pipeline
6897 will be evaluated on a case by case basis based on upstream buildings and
6898 infrastructure. Evaluation of emergency storage may be based on one or all of these
6899 components and will be evaluated against the owner's emergency response plan,
6900 including the response time needed for an operator to receive the alarm, arrive on
6901 site, troubleshoot the situation and install a permanent or temporary solution prior to
6902 an overflow occurring.

6903
6904 Infrastructure may be referred to the site location and design application process
6905 under conditions where infrastructure does not have adequate redundancy, emergency
6906 related infrastructure.

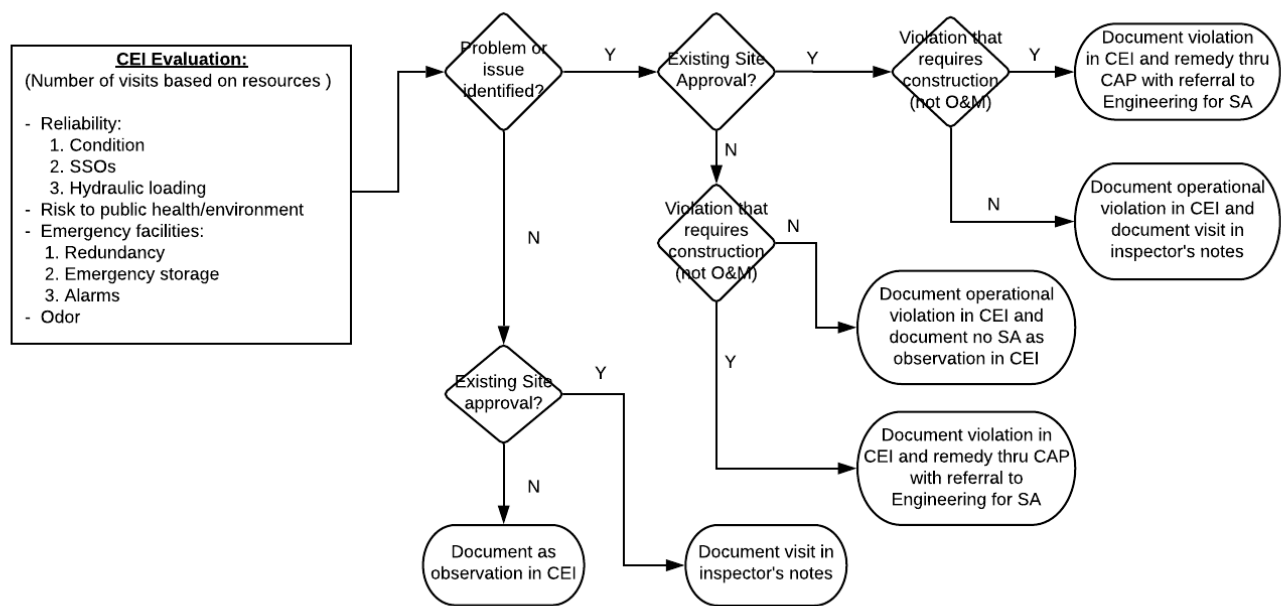
6907
6908 4. Odor complaints. Infrastructure with odor complaints may be evaluated for referral to
6909 the site location and design review process. The Division staff will reference the Air
6910 Pollution Control Division records and the treatment works' records regarding odor
6911 complaints.

6912
6913 Lift stations and interceptors with odor complaints may be referred to the site
6914 location and design application process. The Division will utilize Air Quality Control
6915 Commission *Regulation Number 2 Odor Emission* when evaluating odor complaints and
6916 when considering if addition of odor control is required. When construction is required
6917 to address odor emissions, the Division may refer the infrastructure to the site location
6918 and design application process.

6919
6920 As discussed previously, the Division's priority is the protection of public health and the
6921 environment and uses the CEI process as one tool to satisfy that purpose. During the CEI
6922 process, the Division will evaluate lift station and interceptor infrastructure based on the
6923 criteria described above. A significant portion of this evaluation may take place in the form of
6924 a desktop evaluation performed before and, at times, after the physical in-person inspection
6925 to see the treatment works' infrastructure. Field staff will try to visit as much infrastructure
6926 as possible, however time or resource constraints may not allow for staff to visit all regulated
6927 infrastructure in the collection system. Generally, the Division is not expecting to conduct
6928 site visits to interceptors since that infrastructure is buried. Where staff resources also limit

6929 the number of lift station site visits, staff will prioritize lift station visits based on the criteria
 6930 above and when the results of the desktop evaluation indicate a potential issue or issues.

6931
 6932 Infrastructure that poses a risk to public health and the environment will be referred to the
 6933 site location and design application process to implement improvement. Permittees will be
 6934 expected to work with the Division to obtain site location and design approval for referred
 6935 infrastructure. Failure to obtain approvals or construct necessary improvements may result in
 6936 formal enforcement action from the Division. The flow chart below demonstrates the CEI
 6937 process for how historical infrastructure will be evaluated and either referred to the site
 6938 location and design application process or simply documented.
 6939



6940
 6941 **Figure C-1 CEI Process for the Evaluation of Historical Infrastructure**
 6942