

## FACILITIES PLAN

### 2.0 PURPOSE AND SCOPE

#### 2.1 Purpose

This Facilities Plan for the Carnation Wastewater Treatment Facility (CWWTF), hereafter referred to as the Facilities Plan, was prepared in accordance with Washington Administrative Code (WAC) 173-240<sup>26</sup> for submittal to the Washington Department of Ecology (Ecology). This plan is designed to demonstrate how the siting and design of the CWWTF will meet the applicable guidelines, regulations, and approval requirements for the issuance of a discharge permit. In addition, the Facilities Plan will serve as a comprehensive guide to the project. The City of Carnation (City) has approved and is independently submitting to Ecology a Sewer Facilities Plan<sup>27</sup> for the collection and conveyance of the raw sewage to the CWWTF.

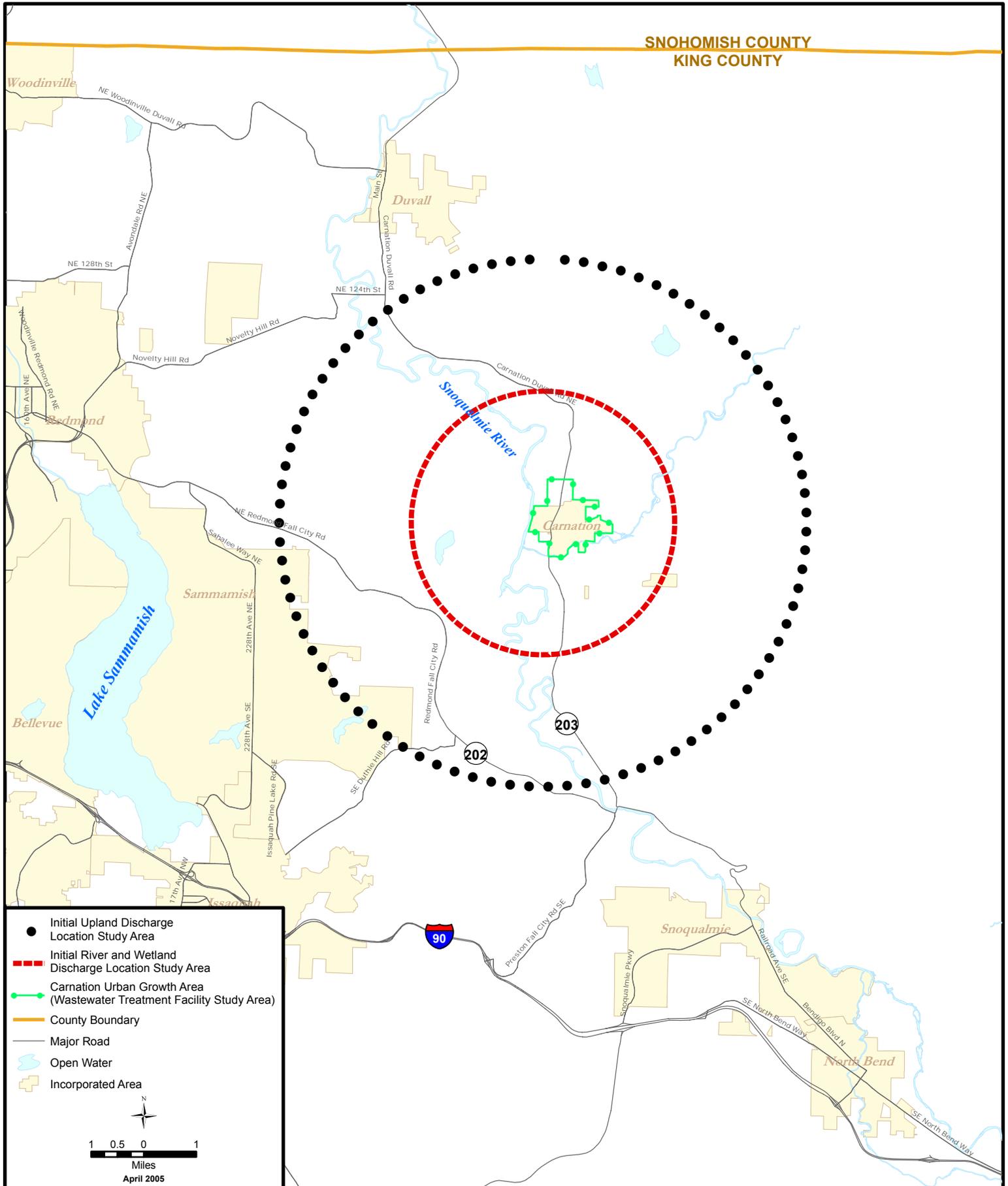
#### 2.2 Background

The City is located on the Snoqualmie River within the Snoqualmie Valley (see Figure 2.1)<sup>28</sup> and is an incorporated city within King County (County). The U.S. Census 2000 population estimates indicate that the City had a residential community of 1,893, including 511 zoned residential units within the city limits and potential annexation area (PAA).<sup>29</sup> The entire City, including the downtown business district and surrounding residential areas, is currently served by individual onsite septic tanks and drain fields for wastewater disposal. Development within the City is limited by the capacity of the existing onsite wastewater disposal systems and lack of sewage collection and treatment facilities.

Construction of a new collection and treatment system will enable the City to continue to grow in accordance with the City of Carnation 1996 General Comprehensive Plan.<sup>30</sup>

#### 2.3 Previous Wastewater Studies

The City has attempted to resolve capacity issues with their current septic tank systems for over a decade. In 1990, R.W. Beck and Associates (R.W. Beck) evaluated the City's needs and service area and screened potential alternatives. The resulting plan identified limited land, aging septic systems not in compliance with existing code, and progressively failing systems as reasons for pursuing alternative disposal methods in the future.<sup>31</sup>



SNOHOMISH COUNTY  
KING COUNTY

The information included on this map has been compiled from a variety of sources and is subject to change without notice. King County makes no representations or warranties, express or implied, as to accuracy, completeness, timeliness, or rights to the use of such information. King County shall not be liable for any general, special, indirect, incidental, or consequential damages including, but not limited to, lost revenues or lost profits resulting from the use or misuse of the information contained on this map. Any sale of this map or information on this map is prohibited except by written permission of King County.

File Name: Q:\WTD\Projects\Carnation\Projects\carnation\_041905.mxd SC  
Data Source: King County GIS

Figure 2.1

**Project Study Areas  
in Carnation and Vicinity**  
CARNATION WASTEWATER  
TREATMENT FACILITY



**King County**  
Department of  
Natural Resources and Parks  
**Wastewater Treatment  
Division**

In 1991, R.W. Beck submitted a draft Wastewater Facilities Plan<sup>32</sup> along with an Environment Impact Statement (EIS)<sup>33</sup> to Ecology. However, the project was not continued at that time in large part due to the fact that the principal service needs were within the central business district, and there was a general lack of support. Although there were concerns of groundwater contamination within the community, no definitive documentation substantiated those concerns.

In 1996, HDR Engineering (HDR) re-evaluated the wastewater treatment alternatives for the City, including an alternative for centralizing treatment among the incorporated cities within the Snoqualmie Valley basin.<sup>34</sup> Later that year, the City adopted a general land use and development comprehensive plan, the City of Carnation 1996 General Comprehensive Plan,<sup>35</sup> which acknowledged the health concerns associated with the existing onsite septic systems and encouraged “pursuing a public sewer system that can adequately serve the needs of the City.”<sup>36</sup> In May 2000, American Engineering Corporation (American) drafted an updated Comprehensive Sewer and Facilities Plan,<sup>37</sup> which was not approved by the City Council and therefore not submitted to Ecology for approval. The draft plan proposed a new sewage collection system that used grinder pumps and low-pressure force mains and a new CWWTF that used the extended-aeration activated sludge process. American recommended that the new CWWTF be sited on a ten acre parcel located west of the downtown business district (between the downtown business district and the Tolt MacDonald Park [also known as the Tolt River – MacDonald Memorial Park]), and two discharge alternatives were provided for the treated effluent: discharge to the Snoqualmie River or discharge upland.<sup>38</sup>

In 2002, the City tasked Roth Hill Engineering Partners (Roth Hill) to prepare another updated Comprehensive Sewer and Facilities Plan and to design a sewer conveyance system. The City accepted Roth Hill’s recommendation to install a vacuum sewer collection system as the means of conveying the sewage to a central location within the City for treatment.<sup>39</sup> In April 2004, the City adopted the updated plan (readopted in October 2004).<sup>40</sup> The 2004 Comprehensive Sewer Plan was approved on January 31, 2005 by the Metropolitan King County Council (County Council) and enacted on February 9, 2005 through King County Ordinance 15116.

The executive summary of the 2004 Comprehensive Sewer Plan is included in Appendix A of this document. The 2004 Comprehensive Sewer Plan further develops cost projections and the implementation of a capital improvement program for sewer installation based on revised population projections for the City. In addition, the 2004 Comprehensive Sewer Plan acknowledges the City’s steadily increasing population and growth management needs. The 2004 Comprehensive Sewer Plan also outlines the City’s long-term wastewater management needs as they relate to current and projected city populations and establishes goals and policies that necessitate a CWWTF. These goals and policies were initially introduced in the 2000 Comprehensive Sewer and Facilities Plan and then developed further in subsequent ordinances adopted by the Carnation City Council (City Council) and

referenced in the 2004 Comprehensive Sewer Plan. This includes Ordinances 650 and 655, which specifically relate to the need for a CWWTF and were passed in 2003.

In September 2004, the City Council approved the draft Sewer Facilities Plan to implement the next phase of design.<sup>41</sup> The executive summary of the Sewer Facilities Plan, City review draft is included in Appendix B of this document. The Sewer Facilities Plan addresses the design, construction, and operation of a new vacuum sewer collection system. The City is in partnership with the County through an interlocal agreement to provide the design, construction, and operation of a local CWWTF.

The following documents list the previous studies, reports, and memoranda prepared, serving as a basis for this Facilities Plan.

- Adolfson Associates, Inc., Carnation Study Area On-site Sewage Disposal System. Alternative Needs Assessment. Draft. January 24, 1990.
- American Engineering Corporation, Draft City of Carnation Comprehensive Sewer and Facilities Plan, May 2000.
- Carollo Engineers, Review and Cost Analysis of Demand Reduction Project for Carnation Treatment Plant, DRAFT, December 2004.
- Carollo Engineers, Technical Memorandum No. 1 - Site Selection, 2004.
- Carollo Engineers, Technical Memorandum No. 2 - Population, Flow, and Loads, 2004.
- Carollo Engineers, Technical Memorandum No. 3 - Geotechnical Reconnaissance, 2003.
- Carollo Engineers, Technical Memorandum No. 4 - Hydraulic Analysis, 2003.
- Carollo Engineers, Technical Memorandum No. 5 – Upland Disposal Alternatives, 2003.
- Carollo Engineers, Technical Memorandum No. 5A – Upland Disposal Alternatives, 2004.
- Carollo Engineers, Technical Memorandum No. 5B – Hydrologic Aspects of the Wetland Disposal Alternative, 2004.
- Carollo Engineers, Technical Memorandum No. 6 - Treatment Process Configuration, 2004.
- Carollo Engineers, Technical Memorandum No. 7 - Solids Handling, 2004.
- Carollo Engineers, Technical Memorandum No. 8 - Odor Control Facilities, 2004.

- Carollo Engineers, Technical Memorandum No. 9 - Support Facilities, 2003.
- Carollo Engineers, Technical Memorandum No. 10 – Electrical, Instrumentation and Control Needs, 2004.
- Carollo Engineers, Technical Memorandum No. 11 - Discharge Alternatives, 2004.
- Cosmopolitan Engineering Group, Technical Memorandum No. 12 - River Outfall, 2004.
- Carollo Engineers, Technical Memorandum No. 13 – Cost Estimate, 2004.
- Carollo Engineers, *Technical Memorandum No. 14 - Plant Alternatives Development*, 2004.
- HDR Engineering, Inc., *King County Wastewater Service to the City of Carnation Memorandum*, September 2001.
- King County Department of Natural Resources and Parks, Wastewater Treatment Division, *Final Environmental Impact Statement for the Carnation Treatment Facility*, October 2004.
- King County Department of Natural Resources and Parks, Water and Land Resources Division, *Draft Existing Water Quality Conditions in the Snoqualmie River near the City of Carnation: 2003-2004 Monitoring Results*, February 2005.
- LAAS (Larson Anthropological Archaeological Services Limited). *Draft Carnation Wastewater Treatment Facility Project EIS Cultural Resources Overview*, King County, Washington, Gig Harbor, Washington, 2004.
- Lucchetti, G., “Salmonid Use of the Snoqualmie River - Tolt Delta Reach,” King County Department of Natural Resources and Parks, 2005.
- R.W. Beck and Associates, *City of Carnation Second Draft Wastewater Facilities Plan*, May 1991.
- R.W. Beck and Associates and Adolfsen Associates, Inc., *Carnation Wastewater Facilities Plan Needs and Service Area Evaluation and Alternative Screening*, 1990.
- Wilson, Dean. Water Quality Planner, King County, Memorandum to King County Wastewater Treatment Division Project Manager Regarding *Alternatives for a Direct Discharge to the Snoqualmie River from the Proposed Carnation Wastewater Treatment Plant*. September 17, 2003.
- Wilson, Dean, King County Water and Land Resources Division, Memorandum to King County Wastewater Treatment Division Project Manager Regarding *Proposal for*

*Habitat Enhancement Using Reclaimed Water from the Proposed Carnation Wastewater Treatment Plant Memorandum, October 1, 2003.*

- Ken Ziebart, Washington Department of Ecology, e-mail message and attachment to Carollo Engineers, October 20, 2003.
- Ken Ziebart, Washington Department of Ecology, e-mail message and attachment to Carollo Engineers, February 3, 2005.

## **2.4 City of Carnation – King County Partnership**

The County has had many years of experience in the design and operation of wastewater treatment facilities. In addition, the County has the staffing resources to undertake such a major capital improvement project, resources that the City does not possess. In 2002, the City and County developed a partnership to design, construct, and operate a local CWWTF. Negotiations between the two municipalities resulted in the County being contracted to design, build, operate, and take ownership of the resulting CWWTF. The City will own and maintain the sewer collection system up to the point of treatment. The CWWTF is scheduled to be operational by late 2007. The Agreement for Sewage Disposal between the City and the County is included in Appendix C of this document.

Negotiations between the County and the City to form a partnership for a design/build/operate (DBO) project began in 2001. At that time, HDR was tasked with performing an analysis of the American 2000 Comprehensive Sewer and Facilities Plan to evaluate the option of directly conveying untreated wastewater to an existing County wastewater interceptor as compared to constructing a new local CWWTF for the County. HDR concluded that constructing a local CWWTF was more cost-effective than conveying the sewage to an existing interceptor.<sup>42</sup> In 2003, the County tasked Carollo Engineers (Carollo) with planning, designing, and providing construction assistance for a new CWWTF. The County released a draft EIS of the treatment and discharge facilities for public review in June 2004 as part of the State Environmental Policy Act (SEPA) process.<sup>43</sup> Resulting comments from eight governmental agencies and 20 individuals or groups were addressed, and the final EIS was released in October 2004.<sup>44</sup>

## **2.5 Study Area**

The 2004 Comprehensive Sewer Plan was developed in compliance with the Washington State Growth Management Act (GMA)<sup>45</sup> in order to guide future decisions related to land use, downtown development, housing, parks and recreation, transportation, utilities, and capital facilities. Passed in 1990, and last amended in 1997, the GMA requires the state's fastest growing counties, and the cities within them, to prepare general land use and development comprehensive plans. The City of Carnation is located within eastern King County, one of the state's fastest growing counties. In accordance with the GMA, the County is required to designate urban growth areas (UGA) within which urban growth will

be encouraged and outside of which growth can occur only if it is not urban in nature. The GMA further states that each city located in such a county will be included within a UGA. A UGA, as defined by GMA, includes compact development densities and urban facilities such as wastewater treatment facilities. The City Council adopted a Capital Facilities Element in the City of Carnation 1996 General Comprehensive Plan<sup>46</sup> that acknowledges the designation of the UGA. The City's UGA includes the area within the current city limits as well as three potential annexation areas.

The sewer and CWWTF service area is limited to the City boundaries at the present time, with the possibility of service to the remaining UGAs in the future.<sup>47</sup> The siting study area for the CWWTF was originally limited to areas within the city limits, but discharge locations for the highly treated effluent (herein referred to as highly treated water) were expanded based on the initial identification of a suitable area beyond the city limits. A 2.5-mile radius was selected as the study area boundary for the discharge location based on the professional judgment of the project team. Screening criteria were applied to this area to identify facility sites as detailed in Chapter 6. Study areas selected for detailed evaluation are presented in Figure 2.2.<sup>48</sup>

## **2.6 Selection of Siting Alternatives**

The King County Geographic Information System (GIS) database and mapping to begin detailing the study area. This data was the main source of information for all site-screening processes, as detailed in Technical Memorandum (TM) No. 1.<sup>49</sup> Information from the County's Parcel Viewer application,<sup>50</sup> and County<sup>51</sup> and City<sup>52</sup> general land use and development comprehensive plans was also used. The Ecology water well database was searched for information about wells in the study area. Finally, Carollo used information from the Federal Emergency Management Agency (FEMA) to confirm floodway and floodway fringe boundaries provided in the County GIS database.

The study area includes the locations for a CWWTF, conveyance pipeline, and discharge structure. All project elements are located in or near city limits. The two CWWTF site alternatives selected for detailed evaluation are both within city limits and are located at: 1) the western end of Entwistle Street (the City-owned site), and 2) immediately east of the fire station (the Weckwerth site). Three discharge alternatives were selected for evaluation. The river outfall discharge alternative at the Carnation Farm Road Bridge (Bridge) was selected for evaluation in the EIS. However, the possibility of discharging the highly treated water into the Snoqualmie River near Tolt MacDonald Park was later evaluated as a possible cost-saving measure and is detailed in Chapter 7 of this document. The wetlands discharge alternative was located about two miles north of the City in the Stillwater Wildlife Area (SWA). The upland discharge alternative was located immediately southeast of the

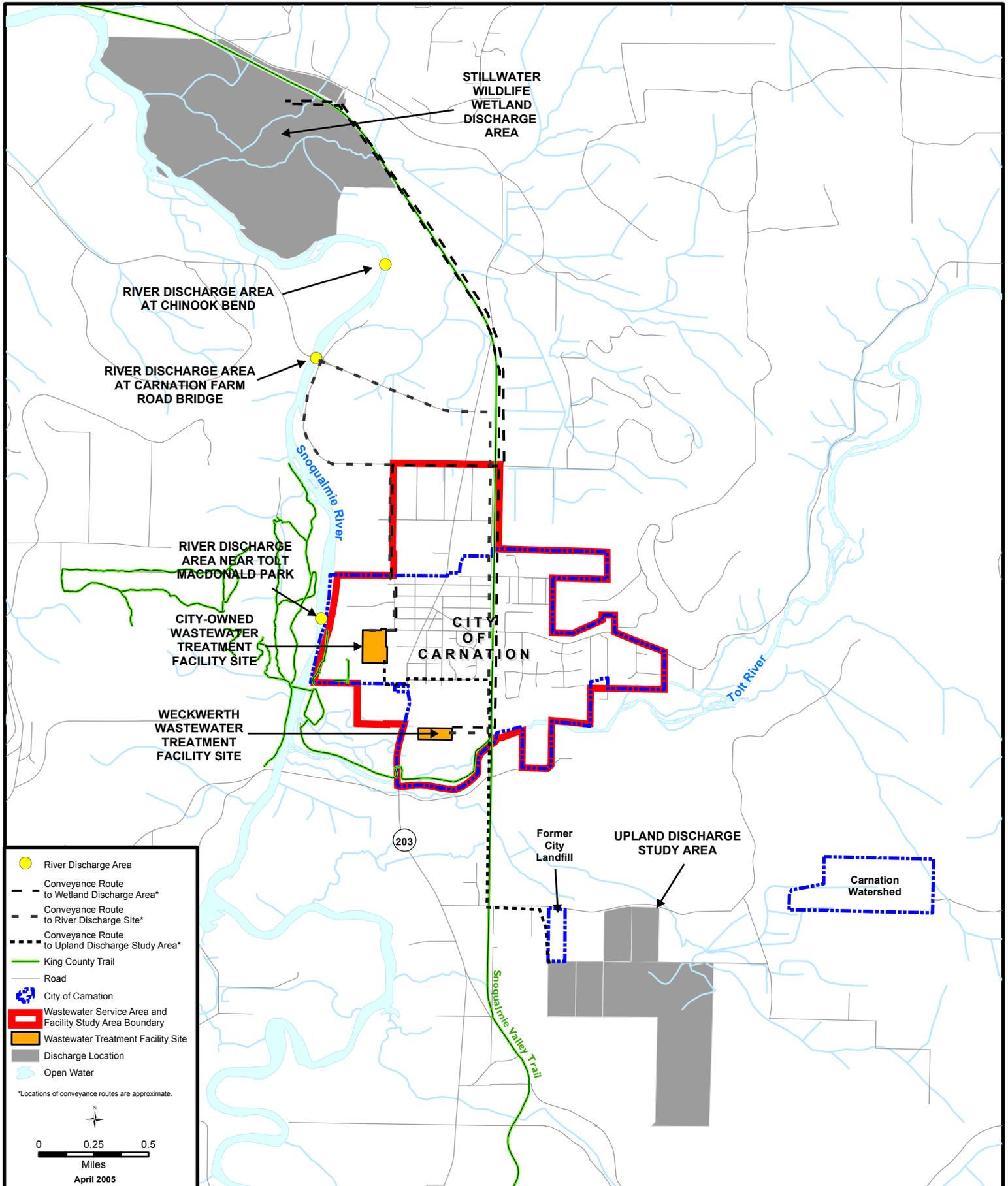


Figure 2.2

former city landfill. Conveyance routes for all three alternatives mainly followed existing rights-of-way along City streets, County roads, and the Snoqualmie Valley Trail between the CWWTF and the discharge locations. The selection criteria and evaluation of alternatives are detailed in Chapter 6.

In Fall 2004, the King County Executive (Executive) selected the City-owned site for the CWWTF. Based on the environmental review and cost considerations, the Executive directed the County to carry forward the river outfall and wetlands discharge alternatives for further study. Although discharge to the SWA offers an opportunity for the use of reclaimed water from the CWWTF to enhance wildlife habitat, preliminary estimates indicate that the wetlands discharge alternative at SWA will cost approximately \$2.2 million more than the river outfall discharge alternative at the Bridge. Design and permitting activities are proceeding with the river outfall discharge alternative but the County will continue to actively pursue potential partnerships and grants to make wetlands enhancement an environmental amenity and an economically viable reuse opportunity. Additional opportunities to enhance wetlands closer to the CWWTF are also currently being evaluated to beneficially provide habitats in a cost conscious manner. The CWWTF design flexibility will allow the facility to be easily retrofitted to meet reclaimed water standards,<sup>53</sup> should the County be interested in applying the highly treated water for reuse applications in the future. If the wetlands alternative becomes financially feasible, the County will prepare an amendment to the Facilities Plan, and complete permitting and environmental requirements such as impairment analysis.

## **2.7 Planning Period**

The CWWTF planning horizon was based on the 2000 US Census data for households, population, and employment within the City's UGA. Planning estimates were developed in negotiations between the City and County in 2004 and presented in the 2004 Comprehensive Sewer Plan.<sup>54</sup> As part of this effort, planning populations were developed as summarized in Table 2.1.

<b>Table 2.1 Projected Population Growth Estimates Carnation Wastewater Treatment Facility King County Department of Natural Resources and Parks</b>			
<b>Year and Milestone</b>	<b>Projection Estimates</b>		
	<b>Population</b>	<b>Households</b>	<b>Employees</b>
<b>2007 – CWWTF startup</b>	2,185	733	634
<b>2012 – Full sewer system<sup>a</sup></b>	3,816	1,281	809
<b>2017 – Residential saturation<sup>b</sup></b>	3,871	1,300	1,254
<b>2030 – Design year<sup>c</sup></b>	3,871	1,300	2,175

Notes:

a. End of the anticipated rapid increase in population (5% annual growth rate until the buildout density is reached) after the vacuum sewers are available.

b. The residential saturation was determined based on the buildout density of the residentially zoned land within the UGA.

c. References population projection for the ultimate design period. The cost-effective alternative analysis and selection is based on a 20-year planning period.

Source: Roth Hill Engineering Partners, LLC, *City of Carnation 2004 Sewer Facilities Plan, City Review Draft*, September 2004.

## **2.8 No Action Alternative Impact**

Under the No Action Alternative, no wastewater collection or treatment facilities would be built, and thus, there would be no direct resource impacts due to construction or operation of a CWWTF. Wastewater would continue to be disposed by means of onsite septic systems. The probability that the onsite septic systems will fail appears to be relatively high in much of the City due to: 1) the criteria under which most of the existing systems were designed, and 2) the age of the systems. Risk to surface and groundwater quality (e.g., bacterial, viral, and contamination by nutrients, metals, and man-made compounds) would remain at present or increased levels. The diminished water quality could potentially result in the decreased availability of water-related recreational resources and could adversely affect biological resources of the Snoqualmie Valley over time.

The No Action Alternative fails to meet the adopted City of Carnation 1996 General Comprehensive Plan goals and policies for managing growth in compliance with the GMA.<sup>55</sup> The City cannot achieve their targeted urban densities due to the large corresponding areas necessary for onsite drain fields. The developed areas of the City already face severe land development restrictions due to Public Health – Seattle & King County (Public Health), formerly known as the Seattle-King County Department of Public Health (SKCDPH), code requirements for onsite wastewater treatment. These requirements would continue to restrict redevelopment and new development in the downtown area if no action is taken. Public Health requirements would likely require the City to continue limiting some

development and possibly impose a moratorium on all new development. The ability of the City to meet its density targets and provide urban levels of service would be severely hampered under the No Action Alternative.

Public Health has estimated that approximately 50 percent of the disposal systems within the City involve the use of sumps or drywells.<sup>56</sup> In 1988, Public Health declared the City a public health hazard area based on the number of inadequate septic systems and the likely contamination of the unprotected aquifer from which drinking water is derived.<sup>57</sup> A recent Public Health letter stated, "Since this 1987 declaration little has changed in regards to the disposal-only septic systems and their potential to contaminate groundwater."<sup>58</sup> On September 28, 2005, the Health Department issued a letter that indicates that due to continued public exposure to surfacing sewage and untreated sewage entering the groundwater aquifer, current on-site sewage disposal practices in the City of Carnation are clearly inadequate and present a severe public health hazard to the community. Additional information has been added regarding the documented concerns and steps taken by the agency. A copy of the most recent correspondence from Public Health is provided as Appendix D of this plan. Copies of the previous letters can be found in Appendix C of the EIS.

Possible adverse impacts during construction of the treatment, conveyance, and discharge facilities that would be avoided under the No Action Alternative include additional noise, traffic, dust, odors, erosion and sedimentation, runoff, and light, as well as potential chemical leaks or spills. Operation of the CWWTF would slightly increase the noise and traffic levels and potentially produce odors, stormwater runoff, and the remote possibility of a partially treated wastewater or chemical spill. Maintaining the existing septic service in the City would decrease the possibility that humans and animals would be exposed (via skin contact) to the treated water.

## 2.9 Project Chronology

Table 2.2 summarizes the decision process milestones to date.

<b>Table 2.2 Decision Process Milestones Carnation Wastewater Treatment Facility King County Department of Natural Resource and Parks</b>	
<b>Decision Date</b>	<b>Decision Summary</b>
<b>June 18, 2002</b>	The City Council passes a resolution approving an interlocal agreement for sewage disposal with County.
<b>January 2003</b>	City Council and County jointly form a Citizen's Advisory Committee (CAC) to support siting of the treatment facility and evaluation of discharge options.
<b>July 1, 2003</b>	<p>City Council passes a resolution approving the siting criteria and process developed by the CAC.</p> <ul style="list-style-type: none"> <li>• Treatment facility sites within the UGA were considered.</li> <li>• Discharge options within 2.5 miles of the City were considered: <ul style="list-style-type: none"> <li>– Upland discharge study area south of the City and Tolt River.</li> <li>– River outfall study areas at three locations: Chinook Bend, the Bridge, and the Park.</li> </ul> </li> </ul>
<b>July 28, 2003</b>	<p>County issues 30-day public notice and request for comments on the scope of the EIS. A public EIS scoping meeting is held on August 6, 2003.</p> <ul style="list-style-type: none"> <li>• Two treatment facility sites (City-owned and Weckwerth) were proposed.</li> <li>• Two discharge options were proposed: <ul style="list-style-type: none"> <li>– Upland discharge sites near former City landfill.</li> <li>– River outfall on east side of Chinook Bend.</li> </ul> </li> </ul>
<b>October 7, 2003</b>	<p>City Council passes Resolution No. 288 approving the treatment facility sites and discharge options to be evaluated in the Draft EIS.</p> <ul style="list-style-type: none"> <li>• Two treatment facility sites (City-owned and Weckwerth) were selected.</li> <li>• Three discharge options were selected, based on public input: <ul style="list-style-type: none"> <li>– Upland discharge study area near former City landfill.</li> <li>– River outfall at the Bridge.</li> <li>– Wetland enhancement at SWA.</li> </ul> </li> </ul>

<b>Table 2.2 Decision Process Milestones Carnation Wastewater Treatment Facility King County Department of Natural Resource and Parks</b>	
<b>Decision Date</b>	<b>Decision Summary</b>
<b>April 20, 2004</b>	City Council Resolution No. 291 approving the decision process and environmental review strategy for selecting a treatment facility site, discharge option, and conveyance route. <ul style="list-style-type: none"> <li>• Cost, engineering, environmental, community and policy criteria will be considered.</li> </ul>
<b>June 28, 2004</b>	County issues the Draft EIS for 30-day public comment. A public hearing is held on July 14, 2004.
<b>August 5, 2004</b>	City Council is briefed on preliminary evaluation of decision factors.
<b>September 2004</b>	County issues Final EIS. The Final EIS does not recommend a preferred alternative.
<b>September 9, 2004</b>	City and County hold a public meeting to share decision process, criteria and preliminary results.
<b>October 19, 2004</b>	City Council is briefed on the staff recommendation on the treatment facility site, discharge options, and conveyance route.
<b>November 2, 2004</b>	City Council passes Resolution No. 297 accepting the staff recommendation on the treatment facility site, discharge options, and conveyance route. <ul style="list-style-type: none"> <li>• The City-owned site west of the business district was selected for the treatment facility.</li> <li>• Upland discharge was dropped.</li> <li>• River outfall at the Bridge and wetland discharge at SWA would be further evaluated.</li> </ul>
<b>December 10, 2004</b>	Executive sends a letter to City Mayor, concurring with the City Council's recommendation.  The Executive stated, "Since the estimated cost of the wetland alternative is considerably higher than a river outfall, we will seek grant funding for implementing the alternative. If we cannot obtain adequate funding, the County will begin designing the river outfall in April 2005."

<b>Table 2.2 Decision Process Milestones  Carnation Wastewater Treatment Facility  King County Department of Natural Resource and Parks</b>	
<b>Decision Date</b>	<b>Decision Summary</b>
<b>April 12, 2005</b>	<p>County staff briefed the City Council on its progress on obtaining funding for wetland discharge.</p> <ul style="list-style-type: none"> <li>• The County is moving forward with design and permitting a river outfall at the Bridge to meet its commitments to the City.</li> <li>• The County will continue to pursue funding for a future wetland in a second phase. A wetland at the SWA and other options closer to the treatment facility will be considered.</li> </ul>
<p><u>Notes:</u></p> <p>Bridge      Carnation Farm Road Bridge  CAC          Citizen’s Advisory Committee  EIS          Environmental Impact Statement  Executive   King County Executive  Park        Tolt MacDonald Park  SWA        Stillwater Wildlife Area  UGA        Urban Growth Area</p>	

## Notes

---

- <sup>26</sup> *Submission of Plans and Reports for Construction of Wastewater Facilities, WAC 173-240 (2000).*
- <sup>27</sup> Roth Hill Engineering Partners, LLC, *City of Carnation 2004 Sewer Facilities Plan, City Review Draft*, September 2004.
- <sup>28</sup> King County Department of Natural Resources and Parks, Wastewater Treatment Division, *Final Environmental Impact Statement for the Carnation Treatment Facility*, October 2004.
- <sup>29</sup> Roth Hill Engineering Partners, LLC, *City of Carnation 2004 Comprehensive Sewer Plan*, October 2004.
- <sup>30</sup> City of Carnation, *Carnation Comprehensive Plan - 1996*, City of Carnation, Washington, <http://www.ci.carnation.wa.us/library/COMPLAN.PDF> (accessed June 1, 2003).
- <sup>31</sup> R.W. Beck and Associates and Adolfsen Associates, Inc., *Carnation Wastewater Facilities Plan Needs and Service Area Evaluation and Alternative Screening*, 1990.
- <sup>32</sup> R.W. Beck and Associates, *City of Carnation Second Draft Wastewater Facilities Plan*, May 1991.
- <sup>33</sup> R.W. Beck and Associates, Adolfsen Associates, Inc., and GAIA Northwest, Inc., *City of Carnation Environmental Impact Statement*, June 1991.
- <sup>34</sup> HDR Engineering, Inc., Herrera Environmental Consultants, and King County Department of Natural Resources, *Wastewater 2020 Plus Snoqualmie Valley Cities*, February 1996.
- <sup>35</sup> City of Carnation, *Carnation Comprehensive Plan - 1996*, City of Carnation, Washington, <http://www.ci.carnation.wa.us/library/COMPLAN.PDF> (accessed June 1, 2003).
- <sup>36</sup> City of Carnation, Washington, *Carnation Comprehensive Plan - 1996: Vision Goal 4*, City of Carnation, Washington, <http://www.ci.carnation.wa.us/library/COMPLAN.PDF> (accessed June 1, 2003).
- <sup>37</sup> American Engineering Corporation, *Draft City of Carnation Comprehensive Sewer and Facilities Plan*, May 2000.
- <sup>38</sup> American Engineering Corporation, *Draft City of Carnation Comprehensive Sewer and Facilities Plan*, May 2000.
- <sup>39</sup> Roth Hill Engineering Partners, LLC, *City of Carnation Supplement to 2000 Comprehensive Sewer and Facilities Plan Collection and Conveyance Study*, April 2002.
- <sup>40</sup> Roth Hill Engineering Partners, LLC, *City of Carnation 2004 Comprehensive Sewer Plan*, October 2004.
- <sup>41</sup> Roth Hill Engineering Partners, LLC, *City of Carnation 2004 Sewer Facilities Plan, City Review Draft*, September 2004.
- <sup>42</sup> HDR Engineering, Inc., *King County Wastewater Service to the City of Carnation Memorandum*, September 2001.
- <sup>43</sup> King County Department of Natural Resources and Parks, Wastewater Treatment Division, *Draft Environmental Impact Statement for the Carnation Treatment Facility*, June 2004.
- <sup>44</sup> King County Department of Natural Resources and Parks, Wastewater Treatment Division, *Final Environmental Impact Statement for the Carnation Treatment Facility*, October 2004.
- <sup>45</sup> *Growth Management -- Planning by Selected Counties and Cities, 36.70A RCW (1990).*
- <sup>46</sup> City of Carnation, *Carnation Comprehensive Plan - 1996*, City of Carnation, Washington, <http://www.ci.carnation.wa.us/library/COMPLAN.PDF> (accessed June 1, 2003).
- <sup>47</sup> Roth Hill Engineering Partners, LLC, *City of Carnation 2004 Comprehensive Sewer Plan*, October 2004.
- <sup>48</sup> King County Department of Natural Resources and Parks, Wastewater Treatment Division, *Final Environmental Impact Statement for the Carnation Treatment Facility*, October 2004.
- <sup>49</sup> Carollo Engineers, *Technical Memorandum No. 1 - Site Selection*, 2004.
- <sup>50</sup> King County, *GIS Center Parcel Viewer*, [http://www.metrokc.gov/gis/mapportal/PViewer\\_main.htm](http://www.metrokc.gov/gis/mapportal/PViewer_main.htm), (accessed 2003).
- <sup>51</sup> King County Department of Development and Environmental Services, *King County Comprehensive Plan*, King County, <http://www.metrokc.gov/ddes/COMPPLAN/2004/index.htm>, Adopted September 27, 2004.
- <sup>52</sup> City of Carnation, Washington, *Carnation Comprehensive Plan - 1996*, City of Carnation, Washington, <http://www.ci.carnation.wa.us/library/COMPLAN.PDF> (accessed June 1, 2003).
- <sup>53</sup> Washington Department of Ecology, *Washington Reclamation and Reuse Standards*, 1997.

---

<sup>54</sup> Roth Hill Engineering Partners, LLC, *City of Carnation 2004 Comprehensive Sewer Plan*, October 2004.

<sup>55</sup> City of Carnation, Washington, *Carnation Comprehensive Plan - 1996: Vision Goal 4*, City of Carnation, Washington, <http://www.ci.carnation.wa.us/library/COMPLAN.PDF> (accessed June 1, 2003).

<sup>56</sup> Adolfson Associates, Inc., *Carnation Study Area On-site Sewage Disposal System. Alternative Needs Assessment. Draft*. January 24, 1990.

<sup>57</sup> Kleeberg, C., Director, Environmental Health Division, Seattle-King County Department of Health, to Mayor Alan Morris, *Wastewater Treatment Compliance Schedule*, April 19, 1988.

<sup>58</sup> Bishop, G., Supervisor, Community Environmental Health, Seattle & King County Public Health Department, to City Manager Bill Brandon, *Letter to City of Carnation Regarding Sewer Development in the City of Carnation*, September 9, 2003.