



**PDC INC. ENGINEERS**

January 29, 2008

**SUBJECT:** Baker and North Star Subdivisions  
Water and Sewer Expansion  
PDC# F07080  
**Agency Scoping Letter**

To Whom It May Concern:

The City of North Pole, Alaska, with funding from the U.S. Department of Agriculture – Rural Development (USDA-RD) and the Alaska Department of Environmental Conservation (ADEC), is proposing to extend the City's existing sewer and water systems to provide services to the Baker and North Star Subdivisions (see Figure 1). The proposed project would add:

- A gravity sewer collection system with two new lift stations
- A water distribution system with fire hydrants
- A pump station to circulate and heat water from the existing transmission main

To determine if this project will qualify as categorically excluded in accordance with USDA-RD guidelines, an initial environmental scoping effort is being conducted. A build alternative and no-build alternative are being evaluated. If it is determined that there are potential adverse environmental effects, an Environmental Assessment may be required. Your input is important, as early identification of environmental issues will facilitate efficient development of the project.

### **Project Background**

In response to requests from residents to expand sewer and water services into their subdivisions, in 1997 PDC Inc. Engineers (formerly FPE/Roen Engineering) prepared a Preliminary Engineering Report for the City of North Pole's Sewer and Water Study for Baker and North Star Subdivisions. This study evaluated the feasibility of the project so that the City could pursue funding for design and construction.

The study evaluated a water distribution system and several sewer alternatives including gravity, pressure, and vacuum systems. The sewer systems were

1028 Aurora Drive  
Fairbanks, AK 99709

T: 907.452.1414

F: 907.456.2707

evaluated to determine which alternative would provide a sustainable and economically feasible system to the subdivisions. Gravity sewer was selected as the engineering preferred build alternative, primarily because of its high reliability, performance, and ease of maintenance. This is the conventional sewer system within the City.

Findings from the 1997 report have been updated with the current needs of the subdivision residents along with the City's planning goals and funding availability.

### **Project Need**

The homes in these subdivisions currently function with private wells and septic systems. Shallow ground water depths make proper operation and maintenance of the septic systems difficult. A review of ADEC's individual house reports (1997 and 2007) show 90% of the recorded septic systems on file within the subdivisions have failed in the past 20 years. Well depths range from 20 feet to 50 feet, but most are shallower than the 40-foot depth required for new construction. Additionally, the natural quality of the groundwater in this area is poor, with high concentrations of hard minerals, making water softeners within each home common. Once constructed, the piped water and sewer systems would remove the risk of failed leach fields contaminating the groundwater and would provide residents with an overall higher quality of water.

Fire protection is also a concern for fully developed subdivisions such as Baker and North Star, which are both located in heavily wooded areas. Routing the water main through the streets would allow construction of a fire hydrant system during this project.

### **Proposed Project Description**

The City of North Pole proposes to expand its sewer and water systems to provide the same safe and reliable service to the Baker and North Star Subdivisions as to other subdivisions within the city limits.

#### ***Sewer Collection System***

The City's existing Sewer Interceptor line would provide the required backbone for expansion into the Baker and North Star Subdivisions. Depending on their capacity, up to three existing lift stations would need upgrades to handle the increased flow from Baker and North Star (Figure 2). These lift stations would either receive new pumps or would be completely replaced, as needed to maintain suitable flow through the lines. Two new lift stations, one in each subdivision, would be required to collect and transport wastewater from homes to the lift stations (Figure 5, Detail B). The new sewer lines would be constructed at depths sufficient to meet the City of North Pole's Utility Standards and the Alaska Department of Environmental Conservation's (ADEC) horizontal and vertical separation distances between sewer and water utilities (Figures 3 and 4).

The sewer mains would be constructed within the city streets and utility easements. Once utility construction is complete, the streets would be re-built to the City's standards.

Depending upon the availability of funding, the project may also extend service lines to the homes within temporary construction easements. If funding is not available, the homeowners would be responsible for extending the service stub to their homes, which per City ordinance must be accomplished within two years of project completion.

### ***Water Distribution System***

The City's existing 12-inch Water Transmission Main, constructed in 1983, would supply water to the Baker and North Star Subdivisions. The proposed distribution system, shown in Figure 2, would consist of an independent circulating loop with a single supply line from the transmission main. A pump station is necessary to provide heat and circulation in the loop. It would be constructed on Tract B-1 at the north end of North Star Drive in the North Star Subdivision (Figure 5, Detail A).

As with the sewer system, the proposed water line would be constructed within the existing street right-of-way and utility easements. Location of the water line within the street would allow access to valves and hydrants. If funding is available, water services would be extended to each house within temporary easements; otherwise, each homeowner would be responsible for installing this connection within two years, as required by City ordinance.

To the extent that funding allows, construction of the water line would be coordinated with the sewer line construction so that ground-disturbing activities and reconstruction of the streets would occur only once.

### **No-Build Alternative**

Without action, the residents of the Baker and North Star Subdivisions would continue to incur the labor and cost to maintain and operate their individual septic systems and wells. The local groundwater and drinking water sources would remain at risk of contamination from failing septic systems, heightened by increased development of the subdivisions and surrounding area. Fire protection would continue to depend on hauled water.

### **Preliminary Research Results**

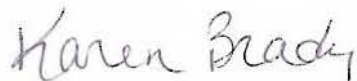
Preliminary research results on environmental resources in the project area are described in Appendix A. A project website has been set up at [www.pdcprojects.info](http://www.pdcprojects.info) to provide project information and allow you to comment.

In addition to identifying any concerns and/or issues your agency might have with the proposed project, the links on the project website will take you to a list of questions specific to your agency and allow you to provide comments via e-mail.

Baker and North Star Subdivisions Water and Sewer Expansion  
Agency Scoping Letter  
January 29, 2008  
Page 4

Your comments will assist us in evaluating possible impacts related to the project. To ensure that all factors have been incorporated in the Environmental Report, we request that you provide us your comments by February 29, 2008. If you have any questions regarding this letter, please contact me directly at 907-452-1414 or [KarenBrady@pdceng.us](mailto:KarenBrady@pdceng.us).

Sincerely,

A handwritten signature in cursive script that reads "Karen Brady".

Karen Brady, P.E.  
Project Manager

Attachments: Figure 1 – Location and Vicinity  
Figure 2 – Sewer and Water Project Map  
Figure 3 – Divided Street Section  
Figure 4 – Undivided Street Section  
Figure 5 – Pump and Lift Station Details  
Appendix A – Preliminary Environmental Research