Recommendation
This is an informational report.

Background
The City of Palo Alto Utilities department (CPAU) conducts ongoing, proactive maintenance and upgrade programs to assure the integrity of its gas system. In response to nationwide concerns over natural gas system safety, Palo Alto’s Gas Utility staff has conducted a more intensified review of its current system conditions. Staff’s goal is to determine the existence of new potential hazards that could affect our customers. As a result of the safety review, CPAU identified a potential risk to the public that requires mitigation. This issue and risk exists in communities across the country. This report outlines the conditions which led to that risk and describes CPAU’s proactive program to resolve the problem.

By the time this report goes out in the Council’s packet, staff will have already launched the first efforts in an extensive public information and outreach campaign (explained in greater detail later in this report). While the industry practice this report reviews exists around the country, City staff have chosen to take an aggressive approach of investigation, identification, and correction.

In the 1980s, gas utilities began installing gas service lines to customers’ properties using techniques that eliminated the disruption caused by the older method of digging trenches across property and through yards. These newer techniques included both pneumatic boring and horizontal directional drilling (HDD). Both of these techniques involve creating a small underground tunnel through the soil and then pulling the new gas line through that tunnel. By the early 1990s, CPAU used only HDD.

Since the earliest implementation of these new installation methods, CPAU has undertaken all standard precautions to place these new pipes in areas distant from the alignments of other
underground utilities, such as water and sewer lines. However, over the years since then, it has become apparent that in rare cases some property owners’ wastewater laterals (sewer pipes) did not follow the expected alignments. In those cases, it is possible that the tunnel boring equipment operator could unintentionally and undetected bore through a wastewater lateral, and the gas pipe would then be installed at intersection with the sewer pipe. The industry term for this situation where different utility pipes intersect is a “crossbore.”

**Description of the Potential Problem**
The possibility of this inadvertent intersection of gas and sewer pipes during installation means that some gas service lines in the City may pass through the property owner's wastewater lateral lines. This potential crossbore situation is not unique to the City. Today, utilities across the country are facing the same issue since pneumatic boring and HDD were standard gas industry pipe installation methods for a period of years.

Crossbores do not pose a dangerous situation under normal circumstances. However, in cases of a slow sewer drain, blockage or sewer overflow, either a plumber or the property owner may use what is known as a snake fitted with a cutter to remove the blockage from the lateral. The cutter can create a serious safety problem if, during the clearing process, it accidentally severs a gas line that intersects with the sewer line.

**Discussion**
The City has taken a number of actions over the last ten years to limit the risk associated with possible crossbores. Staff has proposed a program to inspect sewer laterals for crossbores in the 2012 Operating Budget. This program is being initiated now because of the growing concern nationwide that the crossbores could pose a risk to gas customers. To ensure the safety of our customers, staff has proposed that we investigate and correct any instances that may exist on the gas distribution system.

**Remedial Action Already Taken**
Over the last ten years, the Gas Utility has revised its construction practices to eliminate the possibility of creating a crossbore. Beginning in 1999, the Gas Utility began installing devices known as excess flow valves (EFV), which limit the flow of gas when a line is severed. The City was one of the early adopters of this practice. The Department of Transportation began requiring EFVs on residential services in 2009, which was ten years after the City had already begun installing these devices.

On Gas Main Replacement Project 10 which was constructed in 2000, CPAU began a practice of video inspection of every wastewater lateral where a gas service was replaced on a property. That practice continues today.

**Implementation of a Proactive Cross Bore Safety Program**
At this time the City does not have an accurate estimate of the number of crossbores that may still exist in our system. The few utilities who have recently started inspecting wastewater laterals have found two to four crossbores per mile of main. There are approximately 200 miles
of mains, and 19,300 services within the City. However, it is important to emphasize that staff does not know if these rates of crossbore incidents are representative of the City's situation because different utilities use different operating and construction procedures.

Improved construction practices have reduced the possibility of a crossbore occurring. All gas lines installed in the City’s Capital Improvement Projects since 2000 have been inspected for crossbore. If a crossbore occurs, the installation of EFVs has lowered the risk of a hazard resulting from a gas line being accidentally cut. However, approximately 2,300 services were installed in the City prior to implementation of these improved construction practices.

Therefore, in an effort to improve the safety of the gas system, staff is recommending a program to inspect every sewer system lateral in the community that might have a crossbore. CPAU can undertake this program now because advances in video technology have made it possible to efficiently inspect laterals by running a camera from the sewer mains through the laterals.

CPAU has already started inspecting wastewater laterals that service schools and public meeting places. These inspections are expected to be complete by July 1, 2011. In the summer of 2011, the City will begin the inspection of the residential and commercial wastewater laterals. The City is targeting completion of this inspection by January 2013.

During this inspection process, the City will repair any crossbores by rerouting the gas lines and either replacing or repairing the customers’ wastewater laterals. After video recording the wastewater laterals, CPAU will inform customers as to whether their sewer laterals are in need of other repairs and will make the digital video available to the customers. While CPAU will take responsibility for the repair of any laterals that have a crossbore problem and will share information on the conditions of the sewer laterals with customers, any other repairs of other sewer conditions unrelated to crossbores that are discovered during video review are the property owners’ responsibilities to repair.

Public Communication Plans
While a crossbore situation should exist in only a relatively small number of sewer laterals, and because a safety problem only exists when the sewer line is being cleaned, the City has notified residents and plumbers that they should call the Utilities Department before they attempt to clear a sewer line. CPAU will make staff available 24/7 to respond to these calls promptly, since a sewer emergency is a situation requiring immediate repair. Based on the caller’s address if staff determines a potential crossbore exists, CPAU will send out a qualified employee or contractor immediately to perform an inspection and determine if additional precautions need to be taken.

CPAU has developed an outreach program explaining the crossbore situation, the simple safety precautions that will prevent a hazardous situation, along with the City’s inspection and repair program. This message is being communicated through press notifications, billing inserts, website updates, outreach to neighborhood associations, training for local plumbers, and
provision of brochures at equipment rental agencies for do-it-yourselfers who might be cleaning out their own sewers. It is a very high priority for CPAU to get this information out as widely as possible.

**Timeline**
The following is the proposed timeline for actions being taken by staff.

<table>
<thead>
<tr>
<th>Action</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete public information pieces and post information on the City Website</td>
<td>May 1, 2011</td>
</tr>
<tr>
<td>Complete the inspection of sewer laterals for public meeting places and schools</td>
<td>July 1, 2011</td>
</tr>
<tr>
<td>Complete RFP and award of a contract to contractor performing video inspection</td>
<td>August 30, 2011</td>
</tr>
<tr>
<td>Complete inspection of wastewater laterals requiring inspections</td>
<td>January 1, 2013</td>
</tr>
</tbody>
</table>

**Resource Impact**
This project will require a one-time expense in the Gas Utility Operating Budget. The expenditure will be part of the 2012 operating budget that will be considered by Council. The expense is roughly estimated to be $3.8 million and will depend upon the number of services that require inspection.

**Policy Implications**
If the City Council approves the 2012 budget recommendation from staff this project will further reduce the risks posed by the operation of the Gas Utility.

**Environmental Review**
This report is not a project under the California environmental Quality Act. Therefore, an environmental review is not required.

Prepared By: Tomm Marshall, Assistant Director

Department Head: Valerie Fong, Director

City Manager Approval: James Keene, City Manager