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9/19/2017	1	City Council		

Report to Mayor and City Council

Tuesday, September 19, 2017

Discussion

SUBJECT:

UPDATE ON STATUS OF CAROUSEL TRACT SEWER PIPE INVESTIGATION

I. SUMMARY

Carson has a long history in dealing with the environmental impacts of the petroleum industry. Residents of the Carousel Tract have been particularly impacted by soil contamination and other environmental issues, where petroleum was stored in large tanks that saturated the soil. The majority of the homes in the Carousel Tract were constructed from 1967-1969 with limited soil clean up. The residents brought to the City’s attention major health issues over a decade ago. Through this process, the City became aware of the threat of groundwater contamination as well. As a result, the City has been both assisting the residents and working closely with the Los Angeles Regional Water Quality Control Board (Board) with this major environmental clean-up project.

During the recent cleanup process, some homeowners found that their sewer pipes had been corroded and believed that this corrosion might be a result of the soil contamination around their homes. A number of residents have had to replace sewer pipes, at a cost ranging between \$15,000 and \$20,000 per home.

Consequently, the City hired a forensic engineer - HG Cornerstone - to investigate whether there is a link between the oil impacted soils and the corrosion of the sewer pipes. The engineer has produced an Interim Engineering Observations & Assessment Report (Interim

Report). This Interim Report indicates that a causal connection exists and that more investigation is warranted to finalize the report.

Shell Oil and the City have funded the study to date and to date it has cost approximately \$100,000 to produce this Phase I Interim Report. The costs to complete Phase II of the study are estimated at \$200,000. The City is currently running a \$8 million budget deficit and does not have sufficient funds to complete the study. Council will discuss future actions .

II. RECOMMENDATION

1. Authorize the City Manager to forward the Interim Report produced by HG Cornerstone to the Los Angeles Regional Water Quality Control Board (Board) with a cover letter requesting the Board to take any responsive action that it deems appropriate.
2. Authorize the City Manager to request \$200,000 from Shell Oil to complete Phase II of the study.
3. Approve a budget amendment for \$35,000 to complete the Interim Report and the rest of Phase I.

III. ALTERNATIVES

Take no action in response to the Interim Report, or take other actions that the Council deems appropriate.

IV. BACKGROUND

- ***Site Contamination Resulting from Oil Storage***

Carson has a long history in dealing with the impacts of the petroleum industry. The first refinery in Carson was constructed 100 years ago by Union Oil - the existing Phillips 66 refinery. When oil was discovered by Shell in Signal Hill in 1921 it heralded a rush for Black Gold. Oil speculators turned their sites to Carson, where oil was discovered in 1923 in the Dominguez Field. Oil was discovered in the Wilmington Field in 1938. At one point in time these three fields produced one-half of the nation's oil. Shell constructed a major refinery and chemical plant in Carson in 1928. Richfield constructed a refinery in Carson in 1938, which is now the Tesoro Refinery. Largely unregulated in the early part of the 20th Century, it was not uncommon for petroleum and petroleum products to be stored in earthen bottomed tanks.

The Carousel Tract neighborhood occupies approximately 44 acres of land in the City of Carson. Prior to being developed into a housing tract, this site was owned by Shell Oil Company (formerly, Shell Company of California). From approximately 1924 to the mid-1960s, Shell used this land to store crude oil in three large storage reservoirs, with a combined capacity of over 3.5 million barrels of oil. In 1966, the land was sold to Lomita Development Company. Between 1967 and 1969, Lomita developed the land into single-family residences and sold the lots to individual homeowners. The neighborhood now contains 285 single-family residences. As the result of the previous oil storage and

inadequate remediation efforts by the developer, the soil in the Carousel Tract has been found to contain petroleum hydrocarbons at levels that are hazardous to human health.

- ***Remedial Action Plan***

In order to address the soil contamination issue, the Los Angeles Regional Water Quality Control Board approved a Remedial Action Plan (RAP) in March 2014 and a Revised RAP in June 2015 for the Carousel Tract neighborhood. The Revised RAP requires removal and replacement of soil around the residences, soil vapor extraction, bio-venting, sub-slab mitigation, temporary relocation assistance for dislocated homeowners, and a process to ensure that homeowners will be able to recoup the full fair market value of their property if they choose to sell their homes. The RAP does not address the corrosion issues with the sewer pipes.

- ***Sewer Pipe Investigation***

After the commencement of the remediation work, residents discovered another detrimental impact, potentially caused by the soil contamination: multiple residents found that their sewer pipes were severely corroded and needed to be replaced. Like many homes constructed in the late 1960s, it was not uncommon to use cast iron sewer pipes. The typical life cycle of cast iron pipes in dry soil ranges between 75 to 100 years. Staff suspected that moisture that was mixed in with the petroleum impacted soils might be a factor in the premature deterioration of the cast iron sewer pipes.

In an effort to determine whether sewer pipe corrosion was related to the presence of petroleum impacted soils, the City, through the City Attorney's office, hired a forensic engineer - HG Cornerstone - to test sewer pipes and surrounding soil in the Carousel Tract to determine if there was a connection between the pipe corrosion and the soil contamination.

To date, the investigation has produced the following preliminary conclusions:

Crude oil, in the form of Total Petroleum Hydrocarbons (TPH), has come into direct contact with sewer pipes connected to homes in the Carousel Tract.

The soil directly surrounding multiple sewer pipes contains moisture and microbes that can either cause corrosion of cast iron sewer pipes or exacerbate existing corrosion.

The corrosion of cast iron sewer pipes has allowed raw sewage to leak into the soil beneath homes in the Carousel Tract. This condition presents a potential threat to soil and groundwater since the constituents of raw sewerage can and do include bacteria, viruses, parasites, chemicals harmful to human health and the environment including, for example, carcinogens from household cleaning products, and hormones, pharmaceuticals, and radioactive substances from medications.

The corrosion of the sewer pipes may also expose residents to sewer gasses, which may include potentially dangerous and harmful gasses such as hydrogen sulfide, esters, ammonia, carbon monoxide, methane, sulfur dioxide, and nitrogen oxides.

ANALYSIS

Sample tests and analysis to date indicate a connection between the soil contamination in the Carousel Tract and the premature failure and corrosion of cast iron sewer pipes connected to the residents' homes. However, further analysis and testing is necessary to make any conclusive determinations. Proceeding with \$200,000 in additional research is well beyond the scope of the original direction from the City Council and our budget ability. It is also beyond the City's financial capability. The additional research is beyond what Shell Oil originally committed to. Staff can approach Shell Oil with a request to complete Phase II of the research.

The Los Angeles Regional Water Quality Control Board ("Board"), which is overseeing the implementation of the Remedial Action Plan, may be willing to act on these preliminary conclusions by supporting the completion of the investigation, requiring Shell to complete the investigation, or taking some other action to determine if the home developer should be required to provide relief for homeowners whose sewer pipes have failed or fail in the future.

V. FISCAL IMPACT

Approval of Resolution No. 17-133 would increase the City's FY 17-18 budget by \$33,000.

VI. EXHIBITS

1. HG Cornerstone Interim Engineering Observations & Assessment Report. (pp. 6-73)
2. Resolution 17-133: A Resolution of the City of Carson City council Amending the Fiscal Year 2017-18 Budget in the General Fund. (pp. 74-75)

1.

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