

# **APPENDIX I2**

Water Study



# **WATER STUDY**

## **Ginkgo Stonehouse Property**

**Project Location:**

935 & 965 E Grandview Ave.  
Sierra Madre, CA 91024

**City of Sierra Madre**

232 W. Sierra Madre Blvd.  
Sierra Madre, CA 91024

**Prepared for:**

Ginkgo Stonehouse, LLC  
805 W. Duarte Rd. No. 101  
Arcadia, CA 91007

**Prepared by:**

Advanced Civil Group  
R. Steven Austin, PE  
30251 Golden Lantern, Suite E, PMB 251  
Laguna Niguel, CA 92677

August 10, 2020

## **INTRODUCTION**

### **Project Description**

The proposed project is a subdivision of about 9 acres into 9 single family home lots ranging in size from 20,000 square feet to about 3 acres ("Project"). The Project is located in the northeasterly portion of the city of Sierra Madre ("City"), County of Los Angeles ("County"). The Project is bordered on the south by Grandview Avenue. Existing single family lots are adjacent to the west, north and east Project boundary. A portion of the easterly Project boundary is adjacent to the undeveloped Ginko Stonehouse II project ("GS2"). (see Figure 1 Area Map, Figure 2 Vicinity Map, and Appendix E4 Aerial Map for illustrations of the Project location).

### **Proposed Water System**

The proposed water system to serve the Project is a new 8" water line in Street "A", fed by a connection to the existing water main in Grand View Avenue. Each lot will be served by 1 ½ inch laterals and meters connected to the new 8" waterline.

### **Water Hydraulic Analysis**

The City's third-party reviewer, Sedaru, conducted a water study for the project site. Evaluation criteria and results of the analysis are summarized below.

#### **Evaluation Criteria**

Max Day Demand: 5,670 gpd  
Max Elevation: 860 ft  
Required Fire Flow: 1,250 gpm  
Minimum Pressure: 20 psi

#### **Results of Analysis**

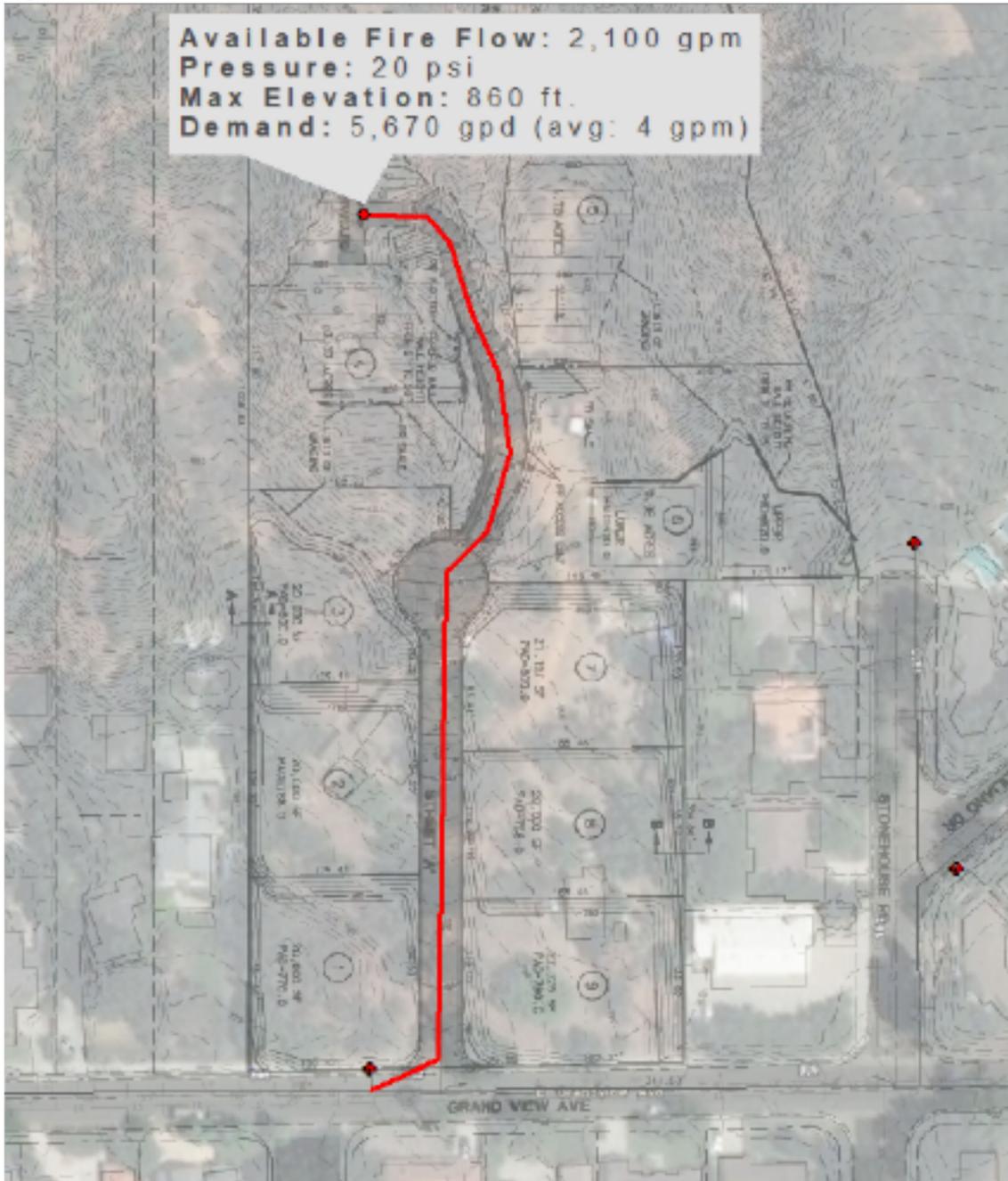
The City's hydraulic model was updated to include the 8-inch pipe along Street A in the proposed Stonehouse Development (shown in red in Figure 1). A demand of 5,670 gpd (average 4 gpm) was added to the junction at the end of the proposed pipe to reflect the maximum day demand. A steady-state model simulation was run under maximum day demand plus fire flow conditions to evaluate the ability of the water distribution system to meet the required fire flow and added demand. Based on the results as shown in Figure 1 below, the system can meet the required fire flow at the max elevation (860 ft.) with added demand while maintaining a minimum residual

pressure of 20 psi in the development and in the existing system. At the required fire flow, the max velocity experienced in the 8-inch pipe is 8 ft/s. See attachment 1 for Sedaru study information.

**Conclusion**

The existing City water system has the ability to serve the Project as designed.

Figure 1: Available Fire Flow at Max Elevation in Proposed Stonehouse Development



**Attachment 1**



Steve Austin &lt;steve@advancedcivilgroup.com&gt;

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**Sierra Madre: Stonehouse Development Analysis**

3 messages

**Jennifer Wood** <jenniferwood@idmodeling.com>

Mon, May 14, 2018 at 3:00 PM

To: Steve Austin &lt;steve@advancedcivilgroup.com&gt;

Cc: "Jose Reynoso (jreynoso@cityofsierramadre.com)" &lt;jreynoso@cityofsierramadre.com&gt;, Paul Hauffen &lt;PaulHauffen@idmodeling.com&gt;

Steve,

Based on the criteria you provided below, we evaluated the proposed Stonehouse Development under maximum day plus fire flow conditions using the City of Sierra Madre's latest hydraulic model. Please see a summary of the analysis below.

**Evaluation Criteria**

- Max Day Demand: 5,670 gpd
- Max Elevation: 860 ft
- Required Fire Flow: 1,250 gpm
- Minimum Pressure: 20 psi

The City's hydraulic model was updated to include the 8-inch pipe along Street A in the proposed Stonehouse Development (shown in red in Figure 1). A demand of 5,670 gpd (average 4 gpm) was added to the junction at the end of the proposed pipe to reflect the maximum day demand. A steady-state model simulation was run under maximum day demand plus fire flow conditions to evaluate the ability of the water distribution system to meet the required fire flow and added demand. Based on the results as shown in Figure 1 below, the system can meet the required fire flow at the max elevation (860 ft.) with added demand while maintaining a minimum residual pressure of 20 psi in the development and in the existing system. At the required fire flow, the max velocity experienced in the 8-inch pipe is 8 ft/s.

**Figure 1: Available Fire Flow at Max Elevation in Proposed Stonehouse Development**



If you have any questions, please let me know.

Have a great week!

jennifer wood, p.e.

**engineering services leader**

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m +1.931.206.5168