



**U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT**  
WASHINGTON, DC 20410-1000

This Worksheet was designed to be used by those “Partners” (including Public Housing Authorities, consultants, contractors, and nonprofits) who assist Responsible Entities and HUD in preparing environmental reviews, but legally cannot take full responsibilities for these reviews themselves. Responsible Entities and HUD should use the RE/HUD version of the Worksheet.

**Explosive and Flammable Hazards (CEST and EA) – PARTNER**

<https://www.hudexchange.info/environmental-review/explosive-and-flammable-facilities>

- 1. Does the proposed HUD-assisted project include a hazardous facility (a facility that mainly stores, handles or processes flammable or combustible chemicals such as bulk fuel storage facilities and refineries)?**

No

→ Continue to Question 2.

Yes

**Explain:**

Click here to enter text.

→ Continue to Question 5.

- 2. Does this project include any of the following activities: development, construction, rehabilitation that will increase residential densities, or conversion?**

No → If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below.

Yes → Continue to Question 3.

- 3. Within 1 mile of the project site, are there any current or planned stationary aboveground storage containers:**

- Of more than 100-gallon capacity, containing common liquid industrial fuels OR
- Of any capacity, containing hazardous liquids or gases that are not common liquid industrial fuels?

No → If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below. Provide all documents used to make your determination.

Yes → Continue to Question 4.

- 4. Is the Separation Distance from the project acceptable based on standards in the Regulation?**

Please visit HUD’s website for information on calculating Acceptable Separation Distance.

Yes

→ If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below.

*Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank."*

No

→ Continue to Question 6.

*Provide map(s) showing the location of the project site relative to any tanks and your separation distance calculations. If the map identifies more than one tank, please identify the tank you have chosen as the "assessed tank."*

**5. Is the hazardous facility located at an acceptable separation distance from residences and any other facility or area where people may congregate or be present?**

Please visit HUD's website for information on calculating Acceptable Separation Distance.

Yes

→ If the RE/HUD agrees with this recommendation, the review is in compliance with this section. Continue to the Worksheet Summary below.

*Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.*

No

→ Continue to Question 6.

*Provide map(s) showing the location of the project site relative to residences and any other facility or area where people congregate or are present and your separation distance calculations.*

**6. For the project to be brought into compliance with this section, all adverse impacts must be mitigated. Explain in detail the exact measures that must be implemented to make the Separation Distance acceptable, including the timeline for implementation. If negative effects cannot be mitigated, cancel the project at this location.**

Note that only licensed professional engineers should design and implement blast barriers. If a barrier will be used or the project will be modified to compensate for an unacceptable separation distance, provide approval from a licensed professional engineer.

Please see discussion below. The site is protected from thermal radiation by intervening buildings.

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### **Worksheet Summary**

Provide a full description of your determination and a synopsis of the information that it was based on, such as:

- Map panel numbers and dates
- Names of all consulted parties and relevant consultation dates
- Names of plans or reports and relevant page numbers
- Any additional requirements specific to your program or region

**Include all documentation supporting your findings in your submission to HUD.**

There are two sites within 1-mile of the project site that contain flammable facilities.

1. **320 Sutro Street** – This site is located southwest of the project site with three estimated 15,000-17,000 gallon tanks on the site. The Acceptable Distance Calculator determined that the acceptable distance for Thermal Radiation for People is 199.62 ft and the acceptable distance for Thermal Radiation for a Building is 35.19 ft. The dike area contains all three tanks and is 1,721 ft from the project site. Therefore, the project is sufficiently far enough away from the site.

## Acceptable Separation Distance Assessment Tool

|                                                    |                                                                       |
|----------------------------------------------------|-----------------------------------------------------------------------|
| Is the container above ground?                     | Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/> |
| Is the container under pressure?                   | Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/> |
| Does the container hold a cryogenic liquified gas? | Yes: <input type="checkbox"/> No: <input type="checkbox"/>            |
| Is the container diked?                            | Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/> |
| What is the volume (gal) of the container?         | <input type="text"/>                                                  |
| What is the Diked Area Length (ft)?                | <input type="text" value="46"/>                                       |
| What is the Diked Area Width (ft)?                 | <input type="text" value="40"/>                                       |
| <b>Calculate Acceptable Separation Distance</b>    |                                                                       |
| Diked Area (sqft)                                  | <input type="text" value="1840"/>                                     |
| ASD for Blast Over Pressure (ASDBOP)               | <input type="text"/>                                                  |
| ASD for Thermal Radiation for People (ASDPPU)      | <input type="text"/>                                                  |
| ASD for Thermal Radiation for Buildings (ASDBPU)   | <input type="text"/>                                                  |
| ASD for Thermal Radiation for People (ASDPNPD)     | <input type="text" value="199.62"/>                                   |
| ASD for Thermal Radiation for Buildings (ASDBNPD)  | <input type="text" value="35.19"/>                                    |

For mitigation options, please click on the following link: [Mitigation Options](#)

2. **1575 E Commercial Row** - This site is located south of the project site with many tanks on the site. The two largest diesel tanks are estimated to be 50,000 gallons. The Acceptable Distance Calculator determined that the acceptable distance for Thermal Radiation for People is 1,411.21 ft and the acceptable distance for Thermal Radiation for a Building is 306.78 ft. These tanks are 1,163 ft from the project site (see figure below). Therefore, the project is not sufficiently far enough away from the site.

# Acceptable Separation Distance (ASD) Electronic Assessment Tool

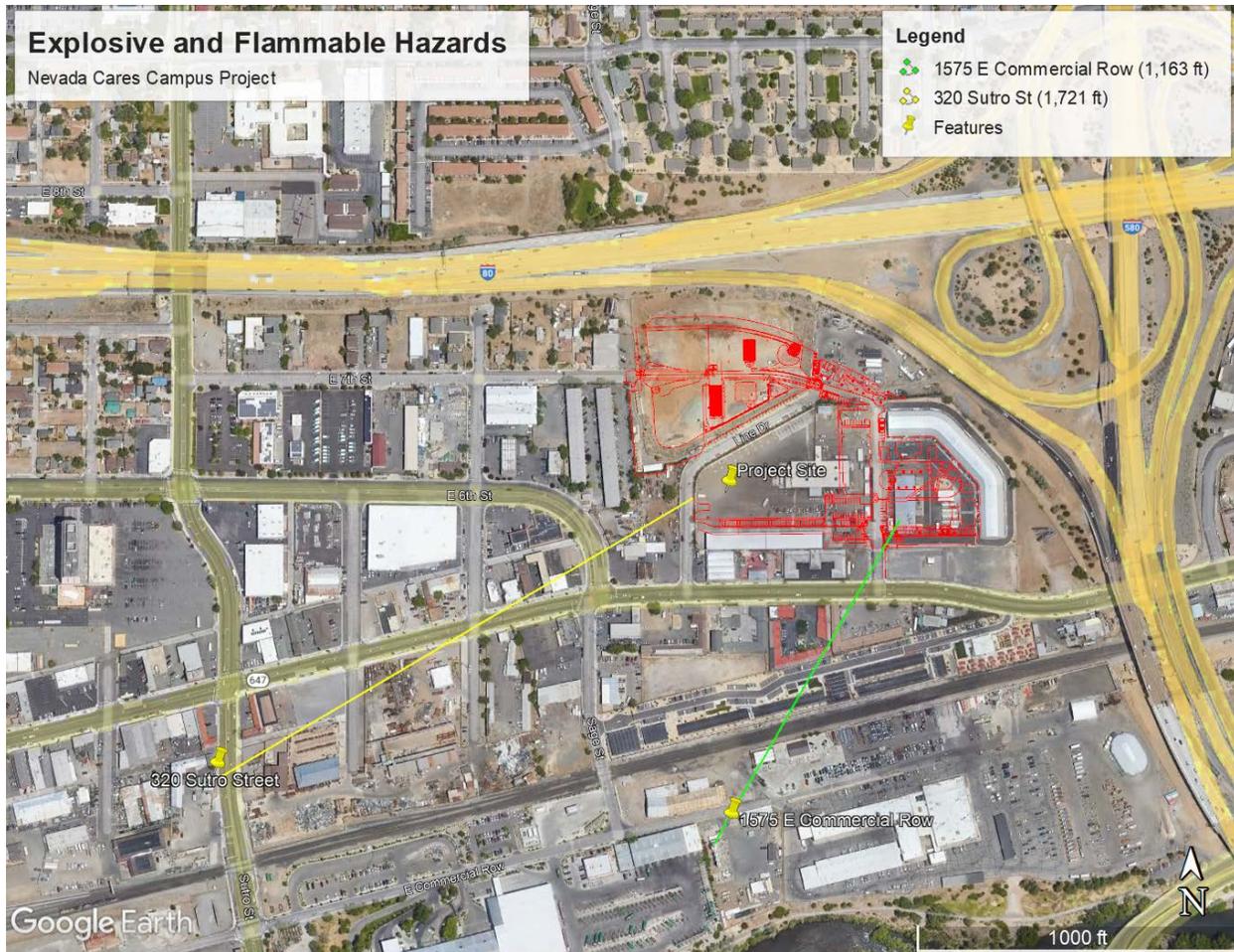
The Environmental Planning Division (EPD) has developed an electronic-based assessment tool that calculates the Acceptable Separation Distance (ASD) from stationary hazards. The ASD is the distance from above ground stationary containerized hazards of an explosive or fire prone nature, to where a HUD assisted project can be located. The ASD is consistent with the Department's standards of blast overpressure (0.5 psi-buildings) and thermal radiation (450 BTU/ft<sup>2</sup> - hr - people and 10,000 BTU/ft<sup>2</sup> - hr - buildings). Calculation of the ASD is the first step to assess site suitability for proposed HUD-assisted projects near stationary hazards. Additional guidance on ASDs is available in the Department's guidebook "Siting of HUD- Assisted Projects Near Hazardous Facilities" and the regulation 24 CFR Part 51, Subpart C, Siting of HUD-Assisted Projects Near Hazardous Operations Handling Conventional Fuels or Chemicals of an Explosive or Flammable Nature.

**Note:** Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the ASD result fields with the mouse.

## Acceptable Separation Distance Assessment Tool

|                                                                         |                                                                       |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------|
| Is the container above ground?                                          | Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/> |
| Is the container under pressure?                                        | Yes: <input checked="" type="checkbox"/> No: <input type="checkbox"/> |
| Does the container hold a cryogenic liquified gas?                      | Yes: <input type="checkbox"/> No: <input checked="" type="checkbox"/> |
| Is the container diked?                                                 | Yes: <input type="checkbox"/> No: <input type="checkbox"/>            |
| What is the volume (gal) of the container?                              | <input type="text" value="50000"/>                                    |
| What is the Diked Area Length (ft)?                                     | <input type="text"/>                                                  |
| What is the Diked Area Width (ft)?                                      | <input type="text"/>                                                  |
| <input type="button" value="Calculate Acceptable Separation Distance"/> |                                                                       |
| Diked Area (sqft)                                                       | <input type="text"/>                                                  |
| ASD for Blast Over Pressure (ASDBOP)                                    | <input type="text" value="798.32"/>                                   |
| ASD for Thermal Radiation for People (ASDPPU)                           | <input type="text" value="1411.21"/>                                  |
| ASD for Thermal Radiation for Buildings (ASDBPU)                        | <input type="text" value="306.78"/>                                   |
| ASD for Thermal Radiation for People (ASDPNPD)                          | <input type="text"/>                                                  |
| ASD for Thermal Radiation for Buildings (ASDBNPD)                       | <input type="text"/>                                                  |

For mitigation options, please click on the following link: [Mitigation Options](#)



Two 50,000 gallon diesel tanks are located at 1575 E. Commercial Row and a 1,411 ft radius of impact for Thermal Radiation for People reaches into the southern portion of the project site. However, there are multiple intervening buildings between the diesel tanks and project site that would significantly attenuate thermal radiation before it reaches the project site. According to the HUD Barrier Design Guidance (24 CFR Part 51 Subpart C), “man-made or natural barriers may serve as abatement from thermal heat flux or blast overpressure effects that can impact HUD-assisted projects and the people that will perform activities associated with the respective projects.” The project site is located in an area of industrial and residential uses in the eastern portion of Reno, Nevada. South and southeast of the project site are motels, multi-family housing, and a railroad corridor. The following is a list of the intervening structures between the site and project site:

1. Village on Sage Street - Modular living comprised of several prefabricated approximately 12 ft tall buildings of wood frame construction that provide 216 private single-occupancy units. This is located at 300 Sage St., Reno, NV 89512.
2. Farris Apartments – Several approximately 20 ft tall apartment buildings at 1752 E. 4th St., Reno, NV 89512.
3. Sandman Motel – An approximately 25 ft tall motel at 1755 E. 4<sup>th</sup> St., Reno, NV 89512.
4. Tahoe Motel – An approximately 20 ft tall motel at 1650 E. 4<sup>th</sup> St., Reno, NV 89512.
5. Hi-Way 40 Motel – An approximately 20 ft tall motel at 1750 E. 4<sup>th</sup> St., Reno, NV 89512.
6. Former Everybody’s Inn Motel – An abandoned approximately 12 ft tall motel at 1756 E. 4<sup>th</sup> St., Reno, NV 89512.

7. Tire Zone – An approximately 15 ft tall tire shop at 1900 E. 4<sup>th</sup> St., Reno, Nevada 89512.
8. Unnamed Property – An approximately 25 ft tall building, potentially a warehouse, at 1725 E. Commercial Row, Reno, Nevada 89512. It is located in front of the tanks at Casazza Oil (the site).
9. Unnamed Properties – An approximately 15 ft tall building and a 12 ft tall building are located at 310 Sage St., Reno, Nevada 89512.
10. WM - RSW Recycling – An approximately 35 ft tall building west of the tanks at Casazza Oil (the site). It is located at 1391 E. Commercial Row, Reno, NV 89512.
11. Former Twin City's Surplus- An approximately 18 ft tall retail store at 1675 E. 4<sup>th</sup> St., Reno, Nevada 89512.
12. Vega Asphalt Paving Inc. – An approximately 15 ft tall building at 1505 E. 4th St., Reno, NV 89512.

HUD was contacted regarding calculating the attenuation and was unable to provide guidance on how that could be done. Washoe County coordinated with the Reno Fire Department about Casazza Oil (the site). A letter from the Reno Fire Department was provided that specifies that Casazza Oil is well outside of the Code-required distance from the Nevada Cares Campus in regard to building location to tank locations (attached). In addition, the tanks in question are within a three minute response time from Fire Station 1 located at 495 E. 4<sup>th</sup> St., Reno, NV 89512. Therefore, the Casazza Oil tanks at 1575 E. Commercial Row would not pose a threat and potential thermal radiation impacts considered by the Fire Department to be mitigated by intervening structures and sufficient distance.

David R Cochran  
Fire Chief



Tray Palmer  
Fire Marshal

**To: Timber Weiss**  
**Washoe County Engineering and Capital Projects**

**From: Tray Palmer, Fire Marshal**  
**Reno Fire Department**

**Date: 1/26/23**

**Subj: Casazza Oil tank location Fire Code requirements**

The following letter is to clarify Fire Code distance requirements for the closest known fuel storage tanks to the CARES Campus.

Casazza oil, located at 1575 E. Commercial Row is well outside of the Code required distance of the cares campus in regards to building location to tank locations.

The adopted 2018 International Fire Code and Building code require the Diesel fuel (Class II liquid) to be 50 to 100 feet from the property line. The propane tank would be 50 to 75 feet. ***IFC Section 6107 and IFC section 5705.***

The Cares Campus is approximately 1,000 feet to the north.

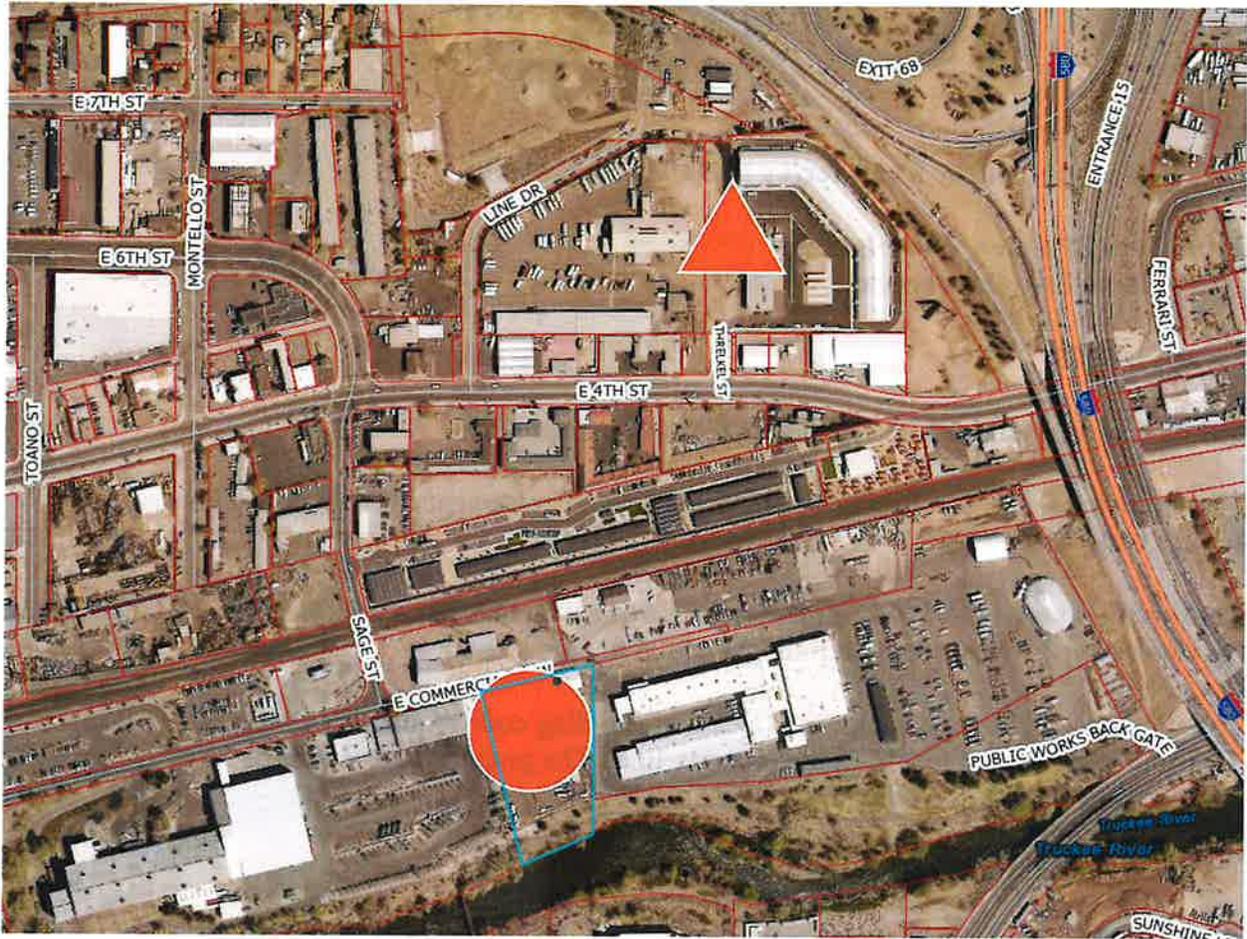
As far as blast radius, the Reno Fire department does not determine blast radius scenarios in regards to new construction requirements. What I can confirm is that the tanks in question are within 3 minutes response time from Fire Station 1 located at 495 E. 4<sup>th</sup> Street.

Between 1575 E. Commercial Row and the cares campus are modular living units of wood frame construction. (see following picture).



**The award-winning Village on Sage Street is open and 100% occupied.**

216 low-income earning residents of Reno call the Village on Sage St. home.



Please contact me if you need any further information.

Sincerely,

**Tray Palmer, Fire Marshal**  
[palmert@reno.gov](mailto:palmert@reno.gov)