

Charles City, IA Parkside Development



Concept & Goal: Net Zero Community

The background of the slide features abstract geometric shapes. A large light blue triangle points towards the top right corner. A smaller green triangle is positioned on the left side, overlapping with the blue one. The overall design is clean and modern.



Community Net Zero - Outline



THE ARMY'S NET ZERO

NET ZERO HIERARCHY

ENERGY

Reduction

Re-Purpose

WASTE

Recycling & Composting

WATER

Energy Recovery

PILOT INSTALLATIONS

NET ZERO ENERGY

- Fort Bliss, TX*
- Fort Carson, CO*
- Fort Detrick, MD
- Fort Hunter Liggett, CA
- Kwajalein Atoll, RMI
- Parks Reserve Forces TA, CA
- Sierra Army Depot, CA
- West Point, NY

NET ZERO WATER

- Aberdeen Proving Ground, MD
- Camp Rilea, OR
- Fort Bliss, TX*
- Fort Buchanan, PR
- Fort Carson, CO*
- Fort Riley, KS
- JB Lewis-McChord, WA
- Tobyhanna Army Depot, PA

NET ZERO WASTE

- Fort Bliss, TX*
- Fort Carson, CO*
- Fort Detrick, MD
- Fort Hood, TX
- Fort Hunter Liggett, CA
- Fort Polk, LA
- JB Lewis-McChord, WA
- USAG Grafenwoehr, Germany

*Identified as Net Zero Pilot Installations (Energy, Water and Waste)

Net Zero Energy

HIGH EFFICIENCY

- HVAC
- Lighting
- Appliances
- Construction

SOLAR ELECTRIC & SOLAR THERMAL

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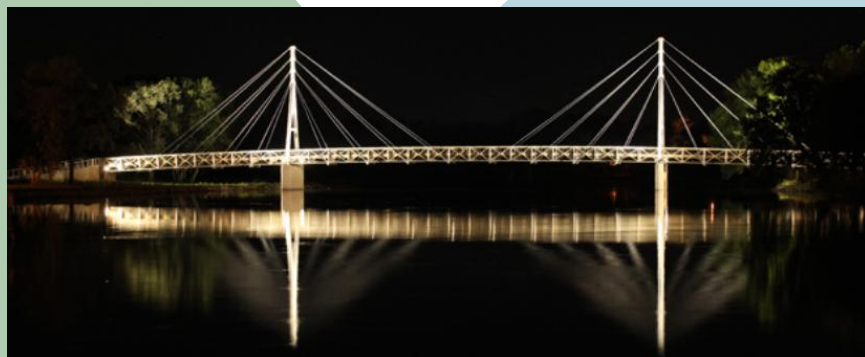
Site:
Location/Selection

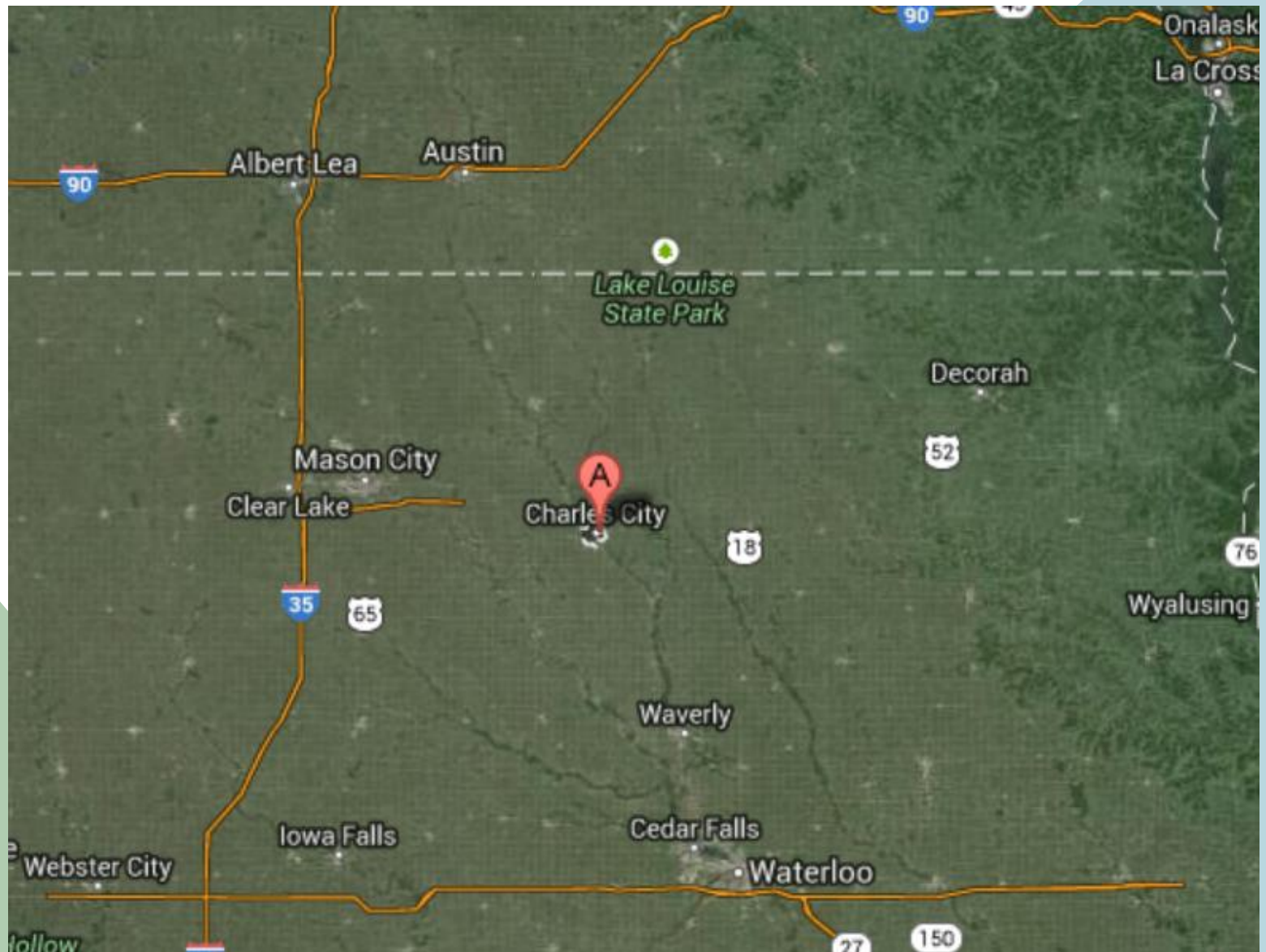


CHARLES CITY IOWA



Population 7,544

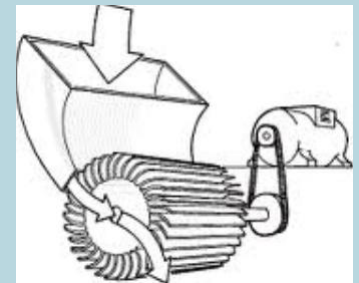





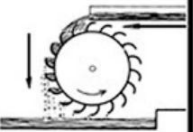
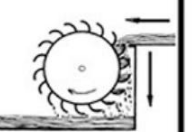
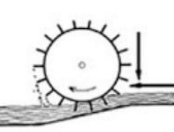
- Close to several communities
- Economic growth



15kw



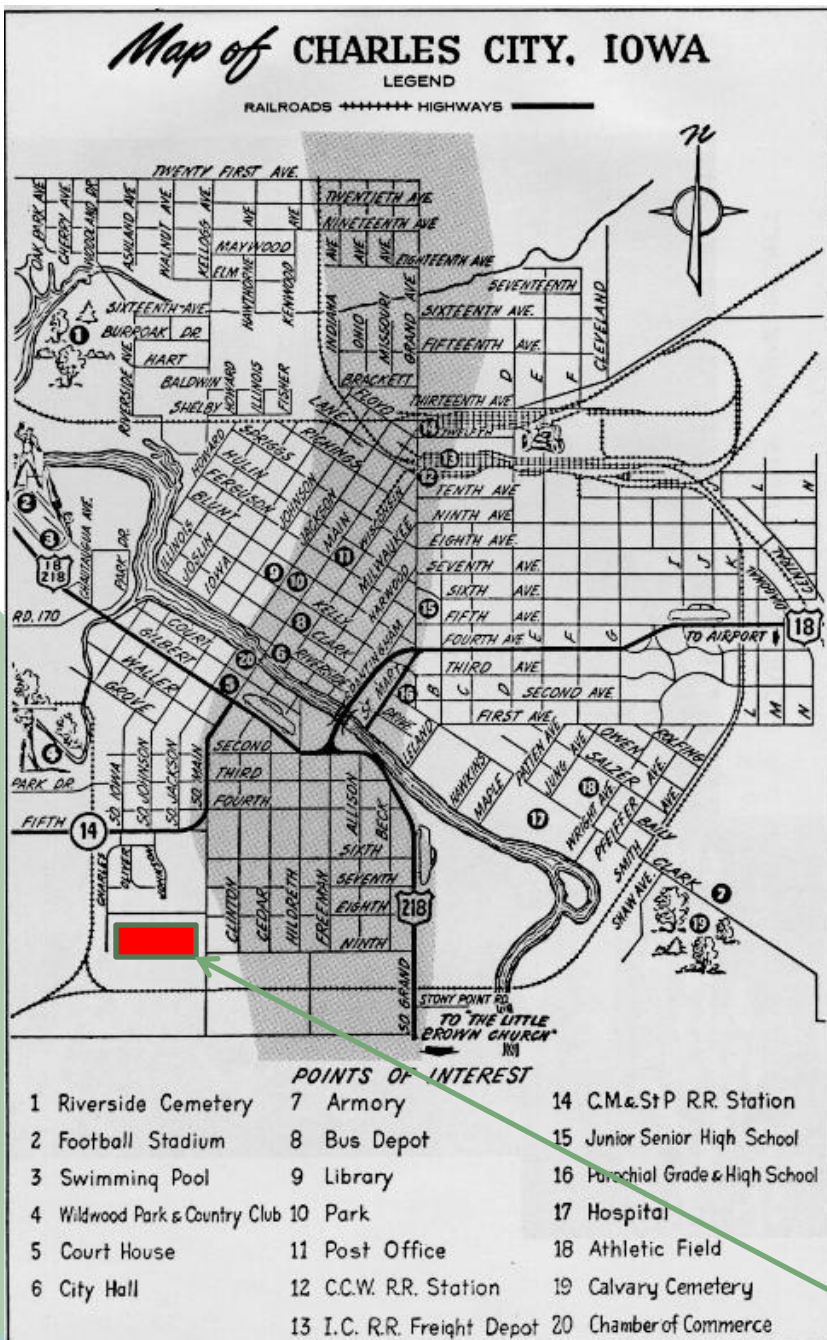
Types Of Water Wheels

Pitch Back Wheel 90% Efficient	Overshot Wheel 70% Efficient	Breastshot Wheel 50% Efficient	Undershot Wheel 20% Efficient
			
Water Height 15'	Water Height 15'	Water Height 6'- 8'	





- 6.7 acres of blighted land
- Previous site of Jefferson Elementary School



May 15, 1968 - F5

Weather--
Partly cloudy, cool
through Friday. Lows
in the 30s to 40s.
Highs Friday in the 50s
to 60s.

VOLUME 91--NUMBER 138
CEDAR RAPIDS, IOWA, THURSDAY, MAY 16, 1968
ASSOCIATED PRESS, UPI, NEW YORK TIMES

The Cedar Rapids Gazette

CITY
FINAL
10 CENTS

IOWA TORNADO TOLL NOW 16

Oelwein, Maynard, Charles City Hit

Iowa News

Tornadoes lashed through Oelwein, Maynard and Charles City Wednesday afternoon, leaving at least 16 dead, hundreds injured and millions of dollars worth of property damaged.

Residents of the communities, still dazed by the awful onslaught, began the task of cleaning up soon after the twisters struck, and were quickly aided by hundreds of volunteers, national guardsmen, and law enforcement people from all parts of the state.

The rubble and debris of smashed houses and business buildings in the communities were still being searched for missing persons. The Red Cross said at least one was still unaccounted for in Charles City and two at Oelwein.

Here is how it happened:

\$14 Million Loss at Oelwein

By Bill Dally

OELWEIN — Dawn today brought the aftermath of a tragic storm in this storm-struck town Thursday. Early rains seemed slow to push back the darkness some 12 hours Maynard, and 12 at Charles City, after tornadoes roared from the northwest in Oelwein and the dead in the north across the Oelwein.

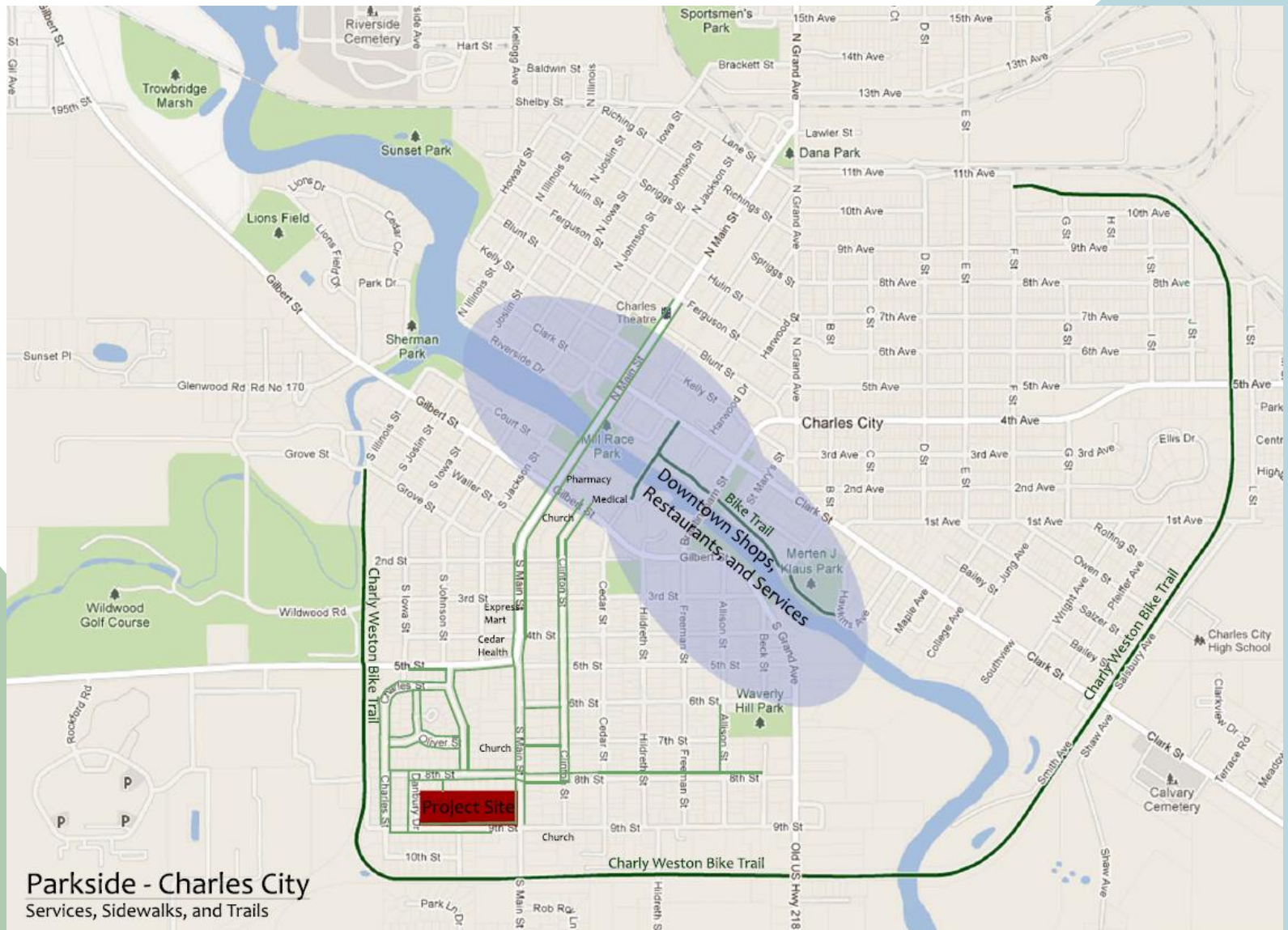
(Other stories and pictures, Pages 2, 8, 9 and Picture Page.)

How 4 Died At Maynard And Oelwein

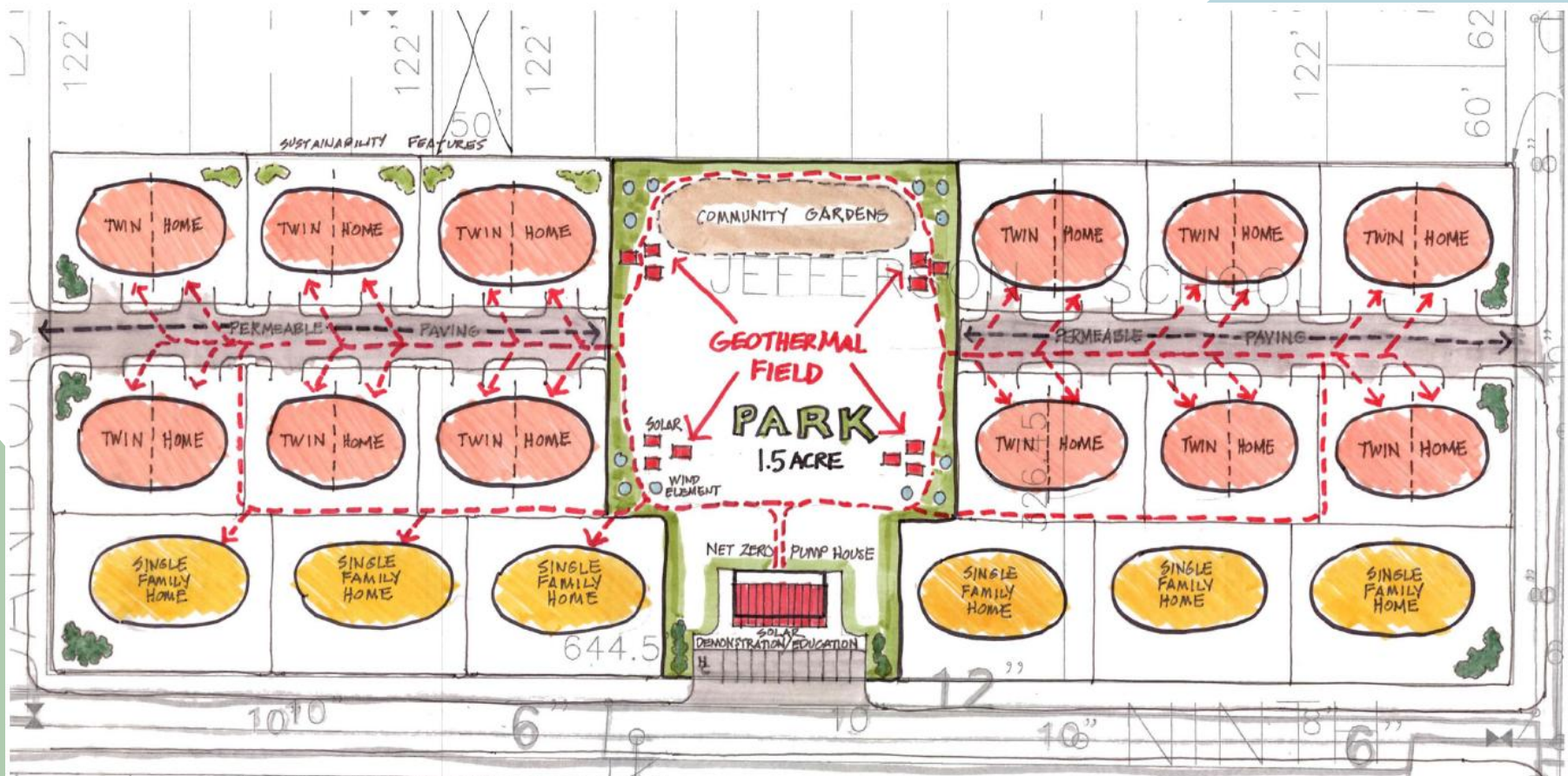
(List of injured, Page 4)

The tornadoes which swept through the communities in the storm-struck area, a brick store in Oelwein when the storm struck. A brick store in Oelwein and two others died in Maynard as a result of the storm which hit the area just before 5 p.m. Wednesday. Albert E. Heaton, 38, Oelwein, was killed. Heaton, 38, escaped storm injury but suffered a heart attack.

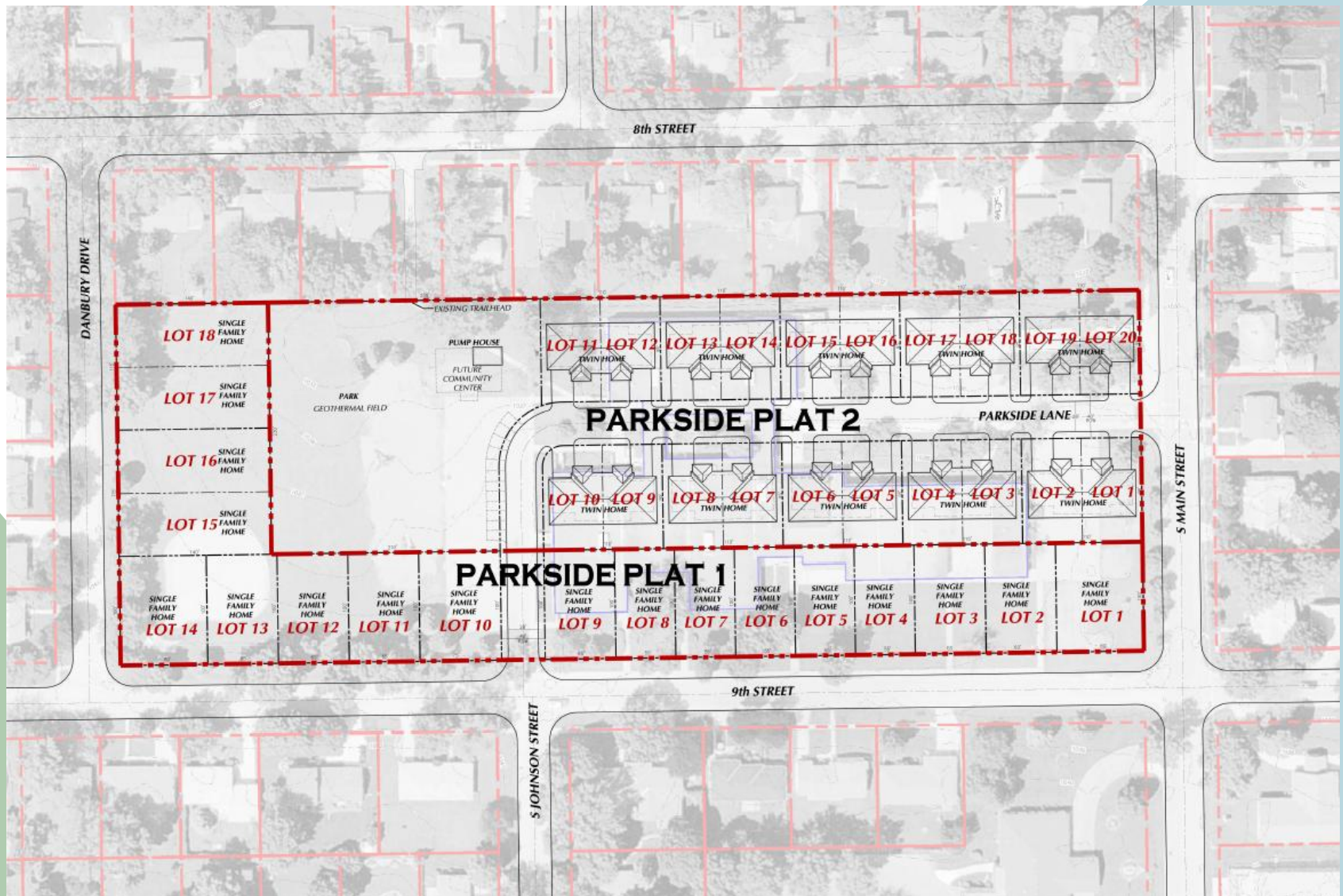
Development Site



- Infill residential area
- Close to downtown, trails



- Initial layout
- Central park
- 30 Lots



- Increased access
- Park where in existing location
- 38 Lots



- Existing site
- Challenges, opportunities.
- Existing trees
- Rock in center of new drive



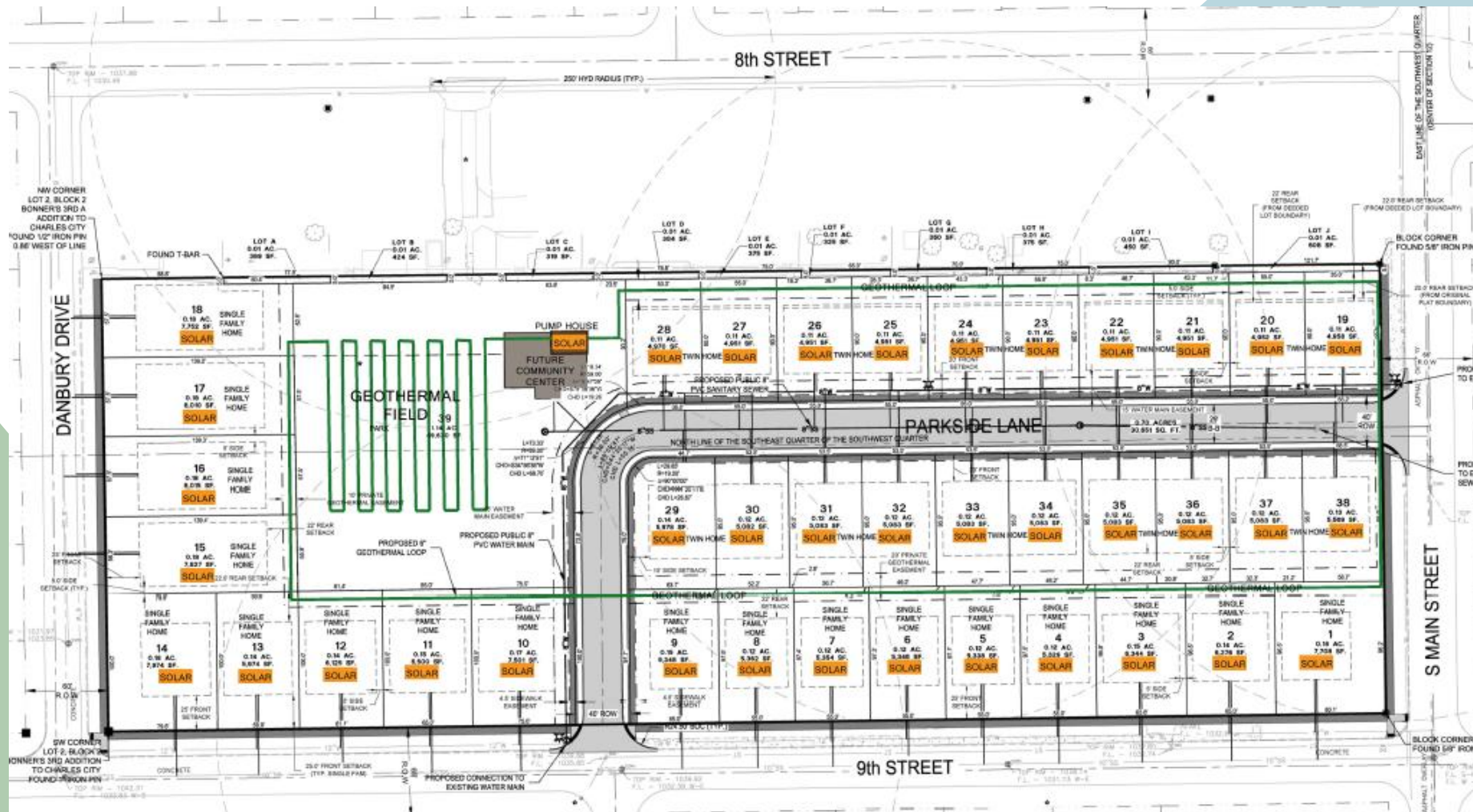
Heavy Rains, low infiltration.



Free Boulder to good home



- Conservation Design Forum (CDF).
- West Union / Charles City
- CDBG Grant



GEOTHERMAL LOOP PHOTOVOLTAIC PANELS

- West Union Model
- Modifications – PV for Pump house
- Single loop
- CDBG Grant

Homes: Construction/Properties



- Home Sweet Home
- Built in 1950
- 1,388 SF + Basement
- Existing Windows
- 85% Gas Furnace
- \$1,560 Annual Utility Costs



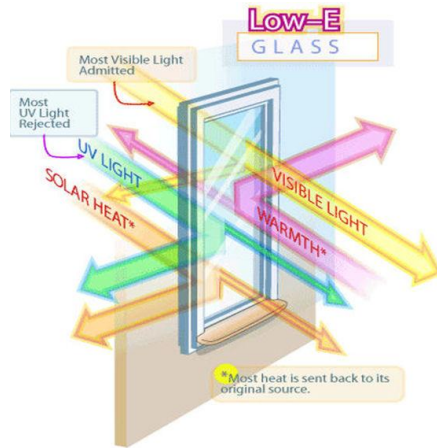
- Single Family Unit
- 1,160 SF, No basement



- Twin Unit
- 1,160 SF, No basement



- Two bedroom, two bath
- Two car garage extended garage



- SIP (Structural Insulated Panel)
- In-floor radiant / Geothermal Heating System
- Insulated Slab on Grade
- Minimum 4 KW Photo Voltaic
- Net energy metering
- Energy Star Appliances
- Heat pump Water Heater
- Low Water Consumption Plumbing Fixtures
- 22 SEER Ductless Heat Pump
- High Eff. Windows
- **AFFORDABLE**





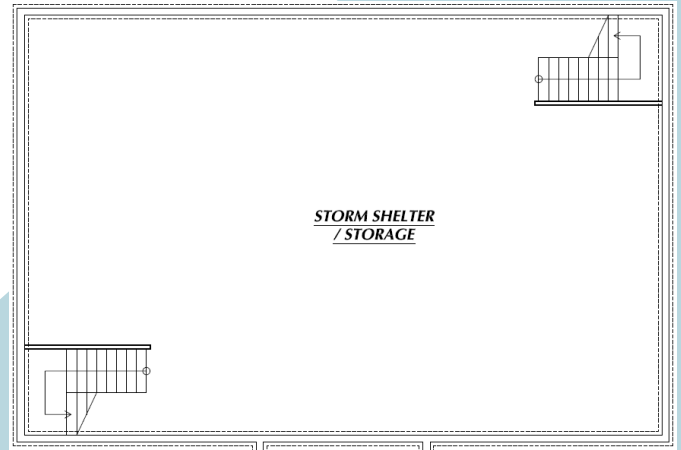
- Construction time accelerated
- No thermal bridging



- Great local response
- SFNC Grant



- Minimal construction waste.



- Community room / classroom room
- Green Roof / Deck
- FEMA safe room
- Community Shared Electric Car / Garage
- HOA / Lawn & Snow Removal



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Questions?