

Site Location: 1015 E Platt St, Maquoketa, IA

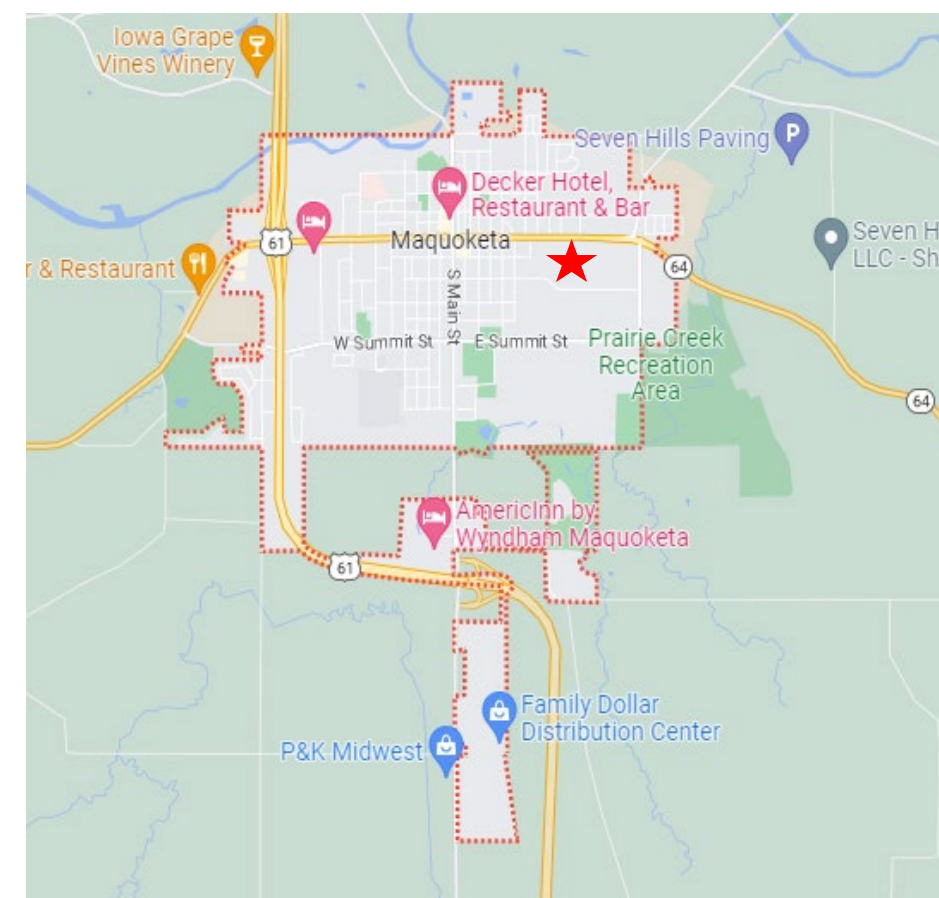


Figure 1. Maquoketa, IA



Figure 2. Site Location

Proposed Design

Below is the recommended design for the Maquoketa Subdivision and drainage design. The layout includes three housing types as well as a stormwater management area and a storm shelter in red.

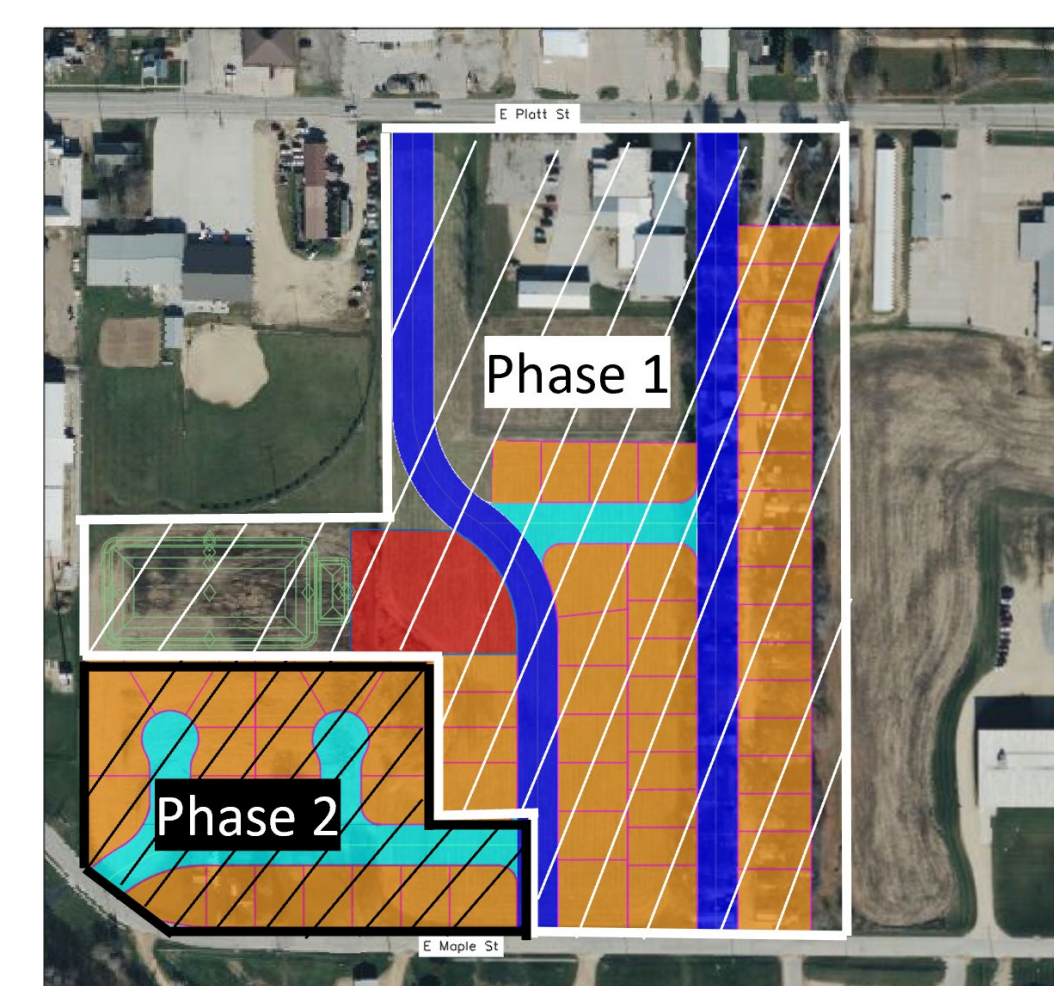
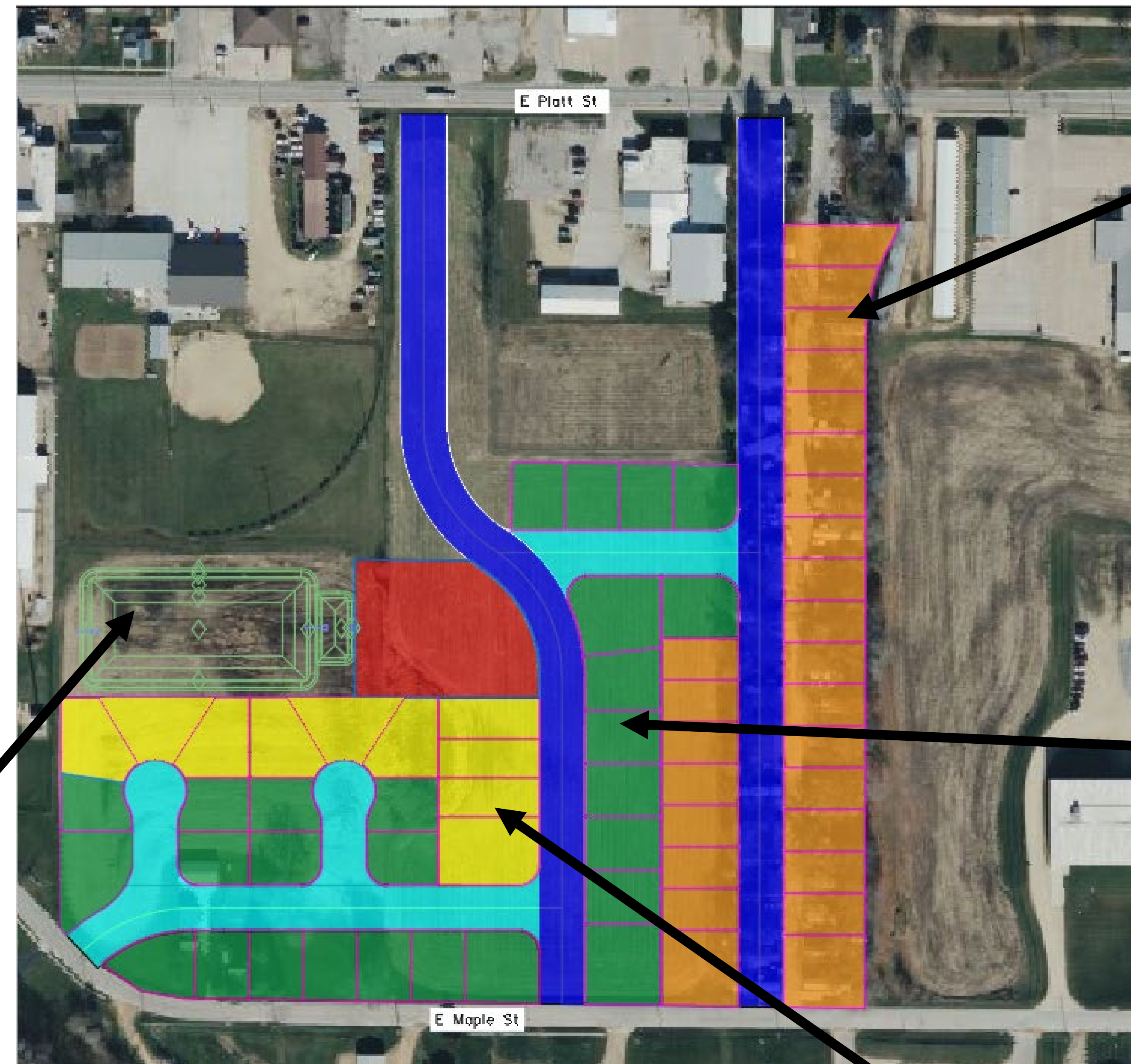


Figure 4. Phasing Plan

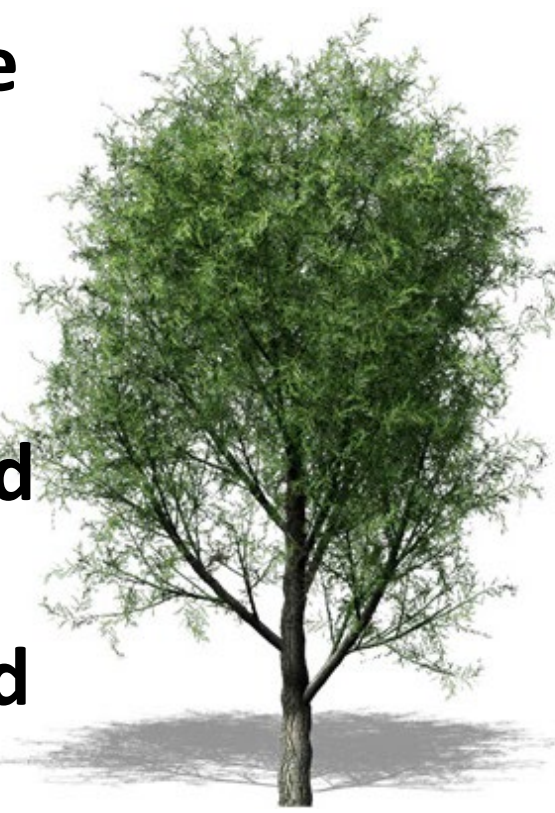
Poplar Tree

Will be planted along the west perimeter of the site. These trees are an ideal choice for phytoremediation and will provide screening for the neighborhood.



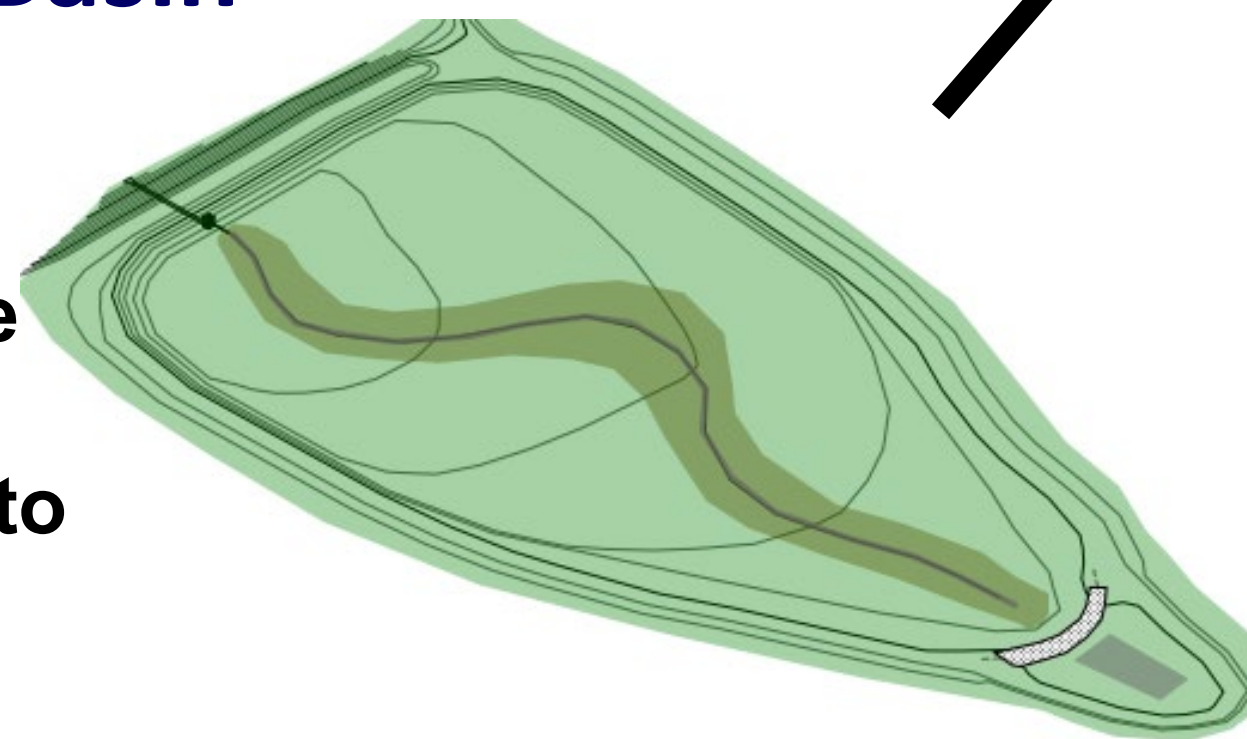
Black Willow

Will be planted in the stormwater management area. These trees thrive in wet environments and will help with both phytoremediation and drainage on the site.



Dry Bottom Detention Basin

The stormwater management area will be a dry bottom detention basin. The purpose of a detention basin is to reduce peak flow events and to provide some water quality treatment



Drainage Results

Table 1.1: Peak Reductions from various storm events entering the Existing open channel around the Electricity building .

| Design Storm | Flow Entering the Existing Open Channel | | |
|--------------|---|--|------------------|
| | Peak Flow: Existing Conditions (CFS) | Peak Discharge: Post-Development (CFS) | Peak Reduction % |
| 2-yr | 56.7 | 12.7 | 77.6 |
| 10-yr | 105 | 23.4 | 77.7 |
| 50-yr | 152.3 | 48.5 | 68.2 |
| 100-yr | 184.5 | 76.4 | 58.6 |
| 500-yr | 217.8 | 98.9 | 54.6 |

Total Costs for phasing one and two are shown below and the cost estimate for each lot.

Project Costs

| Phase One | |
|---|--------------------|
| Site Work and Paving | \$1,579,500 |
| Storm Sewer | \$514,000 |
| Sanitary Sewer | \$285,000 |
| Water Main | \$409,000 |
| Contingencies | 20% |
| Number of Lots | 42 |
| Total Construction Cost Estimate | \$3,268,000 |
| Cost of Infrastructure per lot | \$78,000 |

| Phase Two | |
|---|--------------------|
| Site Work and Paving | \$622,000 |
| Storm Sewer | \$185,500 |
| Sanitary Sewer | \$92,500 |
| Water Main | \$149,000 |
| Contingencies | 20% |
| Number of Lots | 21 |
| Total Construction Cost Estimate | \$1,203,000 |
| Cost of Infrastructure per lot | \$57,000 |

Premanufactured Home

Premanufactured homes are a small compact housing style that typically exists within a pocket neighborhood.



* Shown as a 50' length

Modular Home with Optional Garage

Modular homes are a type of prebuilt house that are like premanufactured homes. However, they are built on different foundation which allows the homes to have more quality.



Stick Built House

A stick-built house is a design in which the house is assembled on site. This job requires precision and a lot more time to build than the other housing options.

