NOTICE
Village of Roberts
Special Plan Commission Meeting &Public Works Committee
Thursday, June 10, 2021
6:00 PM

Agenda

The regularly scheduled Plan Commission meeting will begin at 6:00 PM on June 10, 2021 at the Roberts Village Hall.

1. Call to order
2. Proper notification
3. Discussion on proposed Project Mallard Development and transportation system, sanitary system, storm system, and water system impact.
4. Recommendation for water system improvements, including a new 300,000-gallon water tower, and approach.
5. Other Business
6. Adjourn

Items on the agenda may not be presented in this order.

There may be a quorum of the Village Board members present during the meeting.

Agenda may change up to 24 hours before meeting

Megan Dull,
Village Clerk

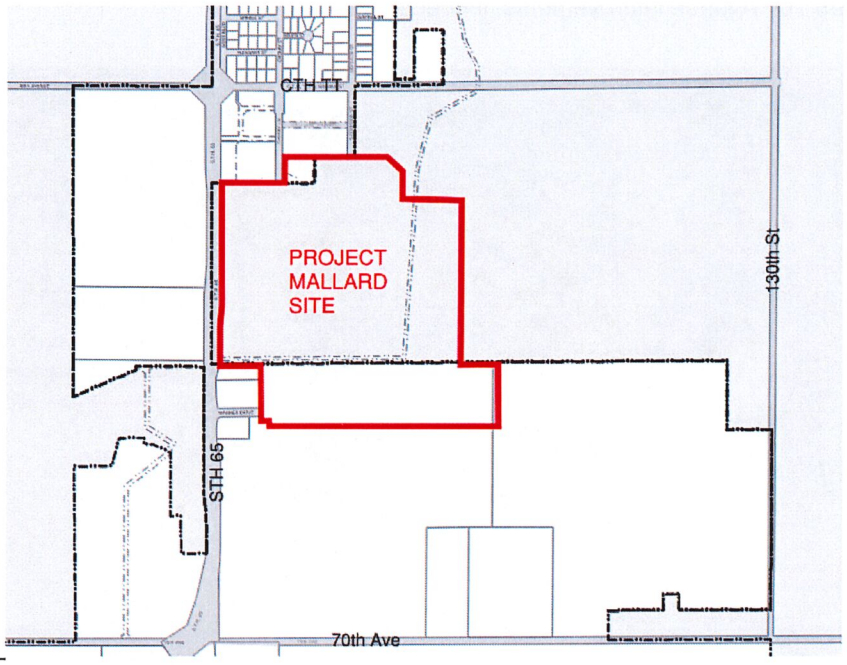
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Access Code: 159-799-037

MEMORANDUM

To:	Roberts Public Works and Plan Commission		
From:	Angi Goodwin		
Date:	June 10, 2021 Meeting	Project No.:	23-0737.19
Re:	Infrastructure Improvements – Project Mallard		

Project Mallard Summary

Project Mallard is a 1.3M square foot warehouse/distribution center proposed to be constructed east of STH 65 directly south of the Senior Housing facility. Proposed zoning is Light Industrial, M-2.



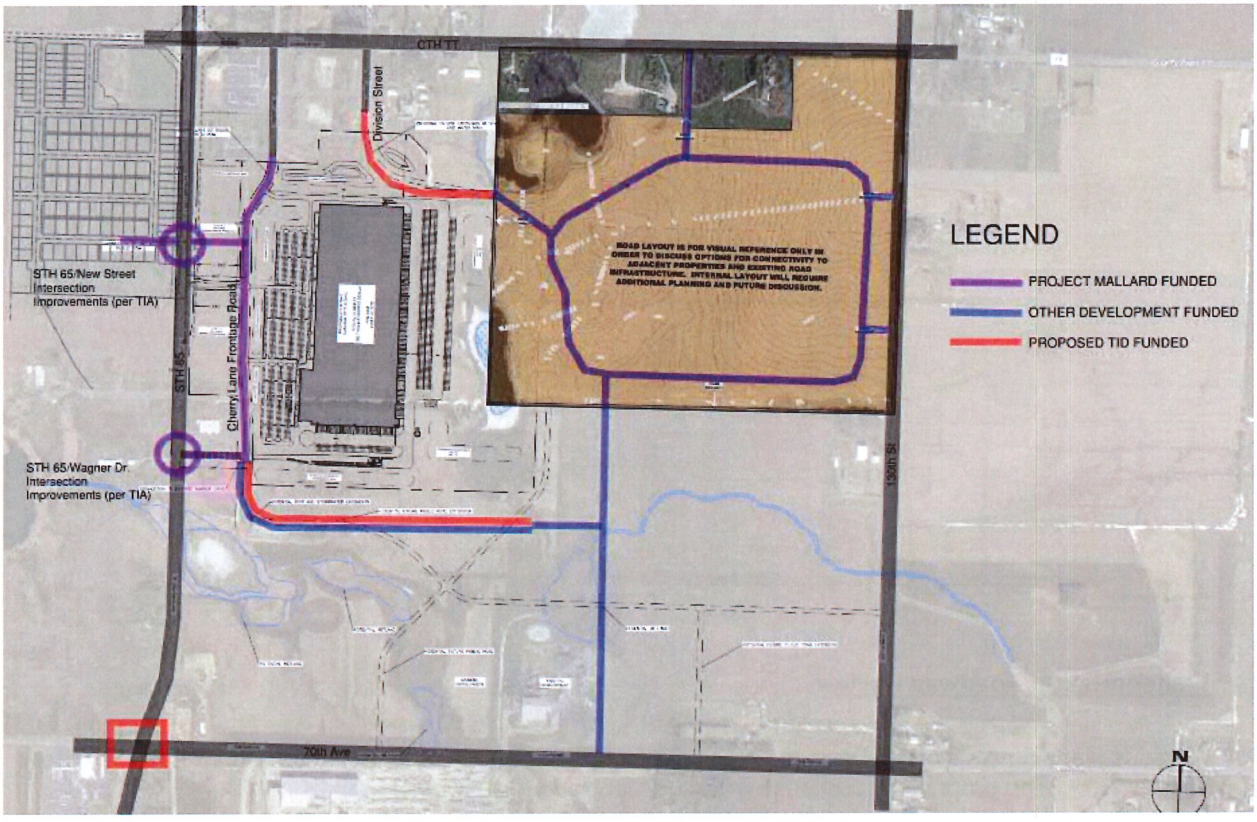
Transportation/Roadway Review

Previous planning anticipated Division Street to extend south to 70th Avenue, and Wagner Drive to extend east to 130th. The proposed warehouse modifies this plan. It is proposed to:

- Extend Division Street to a future planned residential development directly east of the Project Mallard site, and then south to 70th Avenue.

715.834.3161 | 3433 Oakwood Hills Parkway | Eau Claire, WI 54701-7698
www.AyresAssociates.com

- Extend Cherry Lane to the south as a frontage road parallel with STH 65, extending to the south edge of the Project Mallard site.
- Add a new east-west street from STH 65 to Cherry Lane, between Wagner Drive and CTH TT.
- Terminate Wagner Drive at the T-intersection with the Cherry Lane Frontage Road.
- STH 65 intersection improvements and other local intersection improvements as recommended by the Traffic Impact Analysis (not submitted yet, review by Village and WisDOT)
- Project Mallard development is proposing to pay for Cherry Lane improvements, new STH 65 connecting street improvements, Wagner Drive improvements (if needed), STH 65/new street intersection improvements, STH 65/Wagner Drive intersection improvements.
- Project Mallard development is proposing that a new TID (that would include the Project Mallard site if approved) would fund the Division Street extension to their east property line, possibly half of Cherry Lane extended east to their east property line, if determined appropriate as a regional need and STH 65/70th Avenue improvements, if needed per TIA.



Sanitary Collection System Review

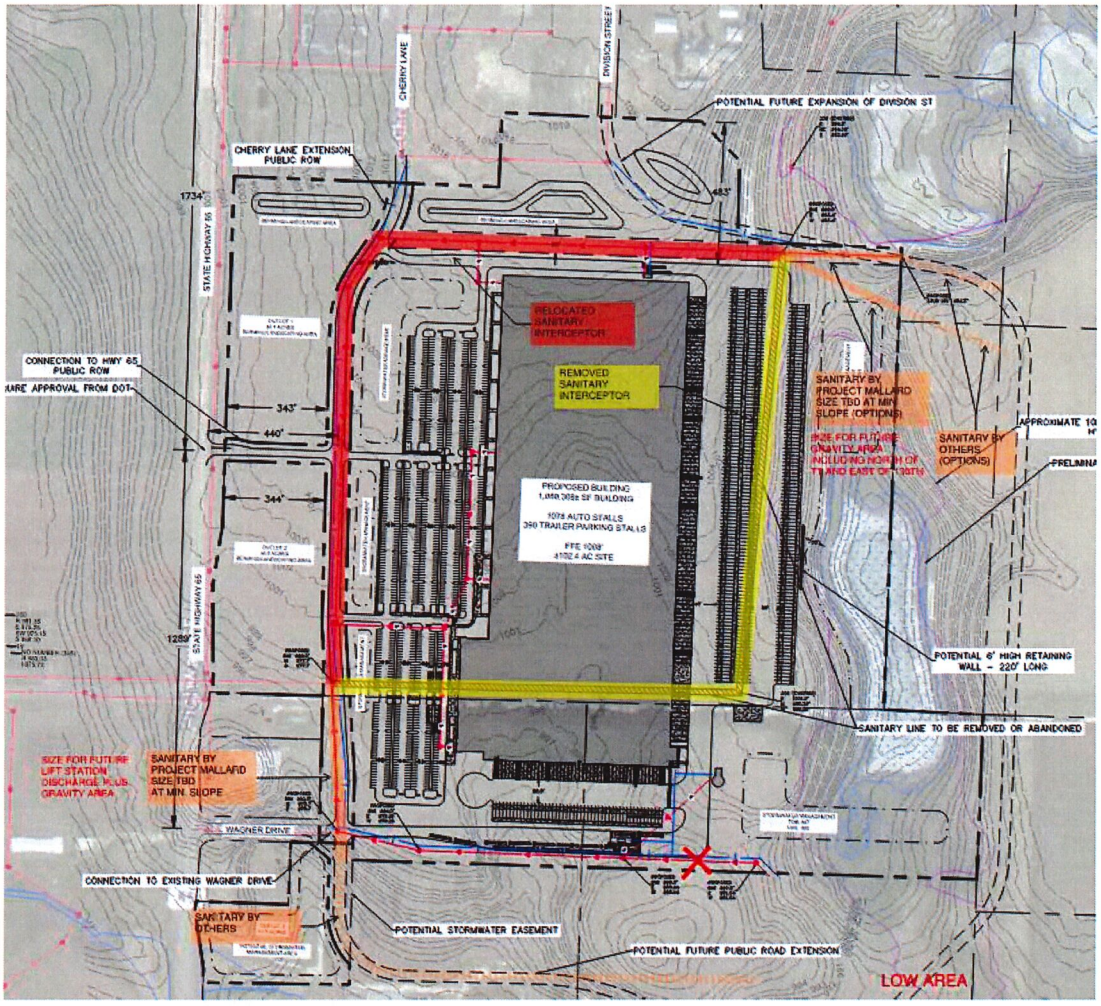
The proposed warehouse is located over the existing sanitary sewer interceptor main. This will be removed or abandoned in place and the easement vacated. A new sanitary interceptor main will be provided with extensions to the east and to the south for future developments. It is proposed to:

- Remove/abandon existing sanitary sewer interceptor main and vacate easement (yellow below).

- Install new public sanitary sewer interceptor main around the proposed warehouse (red below). Easement to be provided for east-west section. North-south section to be located beneath public right-of-way. Sizing to be reviewed by Ayres.

- Install new east public sanitary sewer main for future residential development to the east and to the north. Sewer main to be located beneath Division Street right-of-way. Sizing to be reviewed by Ayres.

- Install new south public sanitary sewer main for future commercial/industrial development to the south. Sewer main to be located beneath Cherry Lane right-of-way. Sizing to be reviewed by Ayres, and to account for lift station discharge from low area southeast of the project site.



Storm Water Treatment Review

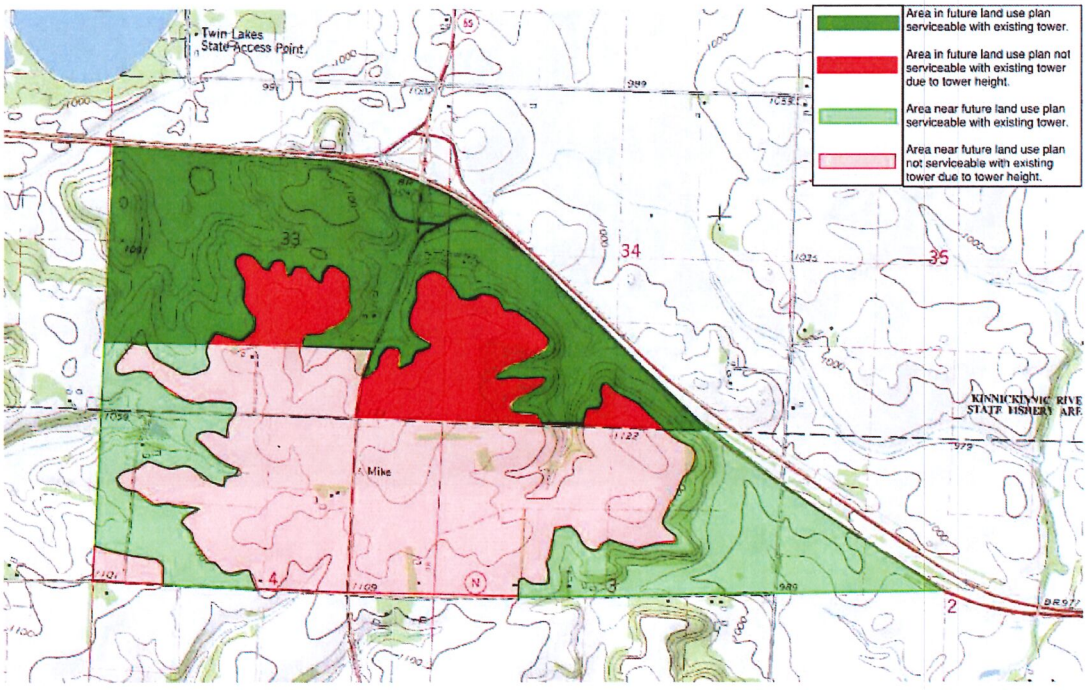
The Project Mallard project will meet the WDNR and Village storm water management/treatment requirements, including the new Twin Lakes drainage basin storm water volume requirements. The Developer is currently reviewing options (likely additional infiltration area) to provide more volume control. At site plan submittal stage, we will have more information for the increased amount of surface water runoff from the project site. Storm water management/treatment areas are shown in the above plan, located west of the employee parking area, and east of the semi-truck parking area.

The Village could consider installing an irrigation system, pumping from Twin Lakes (or adjacent ground water) and piping to Project Mallard site and other future development south and east of Project Mallard. Initial discussion with Village attorney indicates this could be a TID eligible project. WDNR permitting is required (will need to show no adverse lake impacts, what happens when lake levels drop) and annual reporting is required.

Water System Review

The existing water system for the Village consists of:

- *Supply*
    - *Well #1* – 600 gallon per minute capacity, average use approx. 80,000 gallons per day
    - *Well #2* – 280 gallons per minute capacity, average use approx. 40,000 gallons per day
    - *Daily Use* – approx.121,000 gpd, reasonable, WWTP treats 110,000 gpd
- *Storage*
    - *Water Tower* – 250,000-gallon elevated tank
    - *Highest Elevation Served* - 1110 feet above msl, higher tower or booster station required south of IH 94.



- *Distribution*
    - *Looped Water Main, 14" to Packer Drive Business Park, 6" and 8" older mains*

Previous planning included:

- Second Water Tower- The location of the second water tower was not planned, but generally near the south end of the Village near IH 94.
- Third Well – 600 gallon per minute capacity (match largest existing well) and the location is not yet planned.
- Water Main Outer Loop - The larger water main loop was extended south from the WWTP with the Flying J development and was anticipated to be extended east (possibly beneath 70th Avenue) and then north (possibly beneath 130th Street) connecting to the larger water main at Packer Drive.

Fire Protection NFPA/ISO Recommended Goals (minimum 120 minutes duration, minimum 20 psi at all locations) include:

- 500 gpm – Minimum (WDNR requirement)
- 1,000 gpm – Single Family Residential
- 2,000 gpm– Multi-Family Residential
- 2,500 gpm – Commercial
- 3,500 gpm – Industrial

Project Mallard Fire Protection Needs (currently proposing to install private fire protection tank/system):

- For Annual Testing:
  3000 gpm @ 20 psi for 30 minutes. (volume 90,000 gallons of storage)
- For Sprinkler Demand:
  2600 gpm @ 20 psi for 60 minutes (volume 160,000 gallons of storage)
- For Fire Flow Demand: (Based on IFC Appendix B with 75% reduction for sprinklered building)
  2000 gpm @ 20 psi for 120 minutes (volume 250,000 gallons of storage)

Water System Improvements – SUPPLY AND STORAGE ANALYSIS (including fire protection volume)

Supply rate (wells) and storage volume (tower) needs are dependent on each other, and include determination of:

- Reliable Supply (well capacity) to meet maximum daily demands, assumes largest well is out of service and adequate storage is available
    - Currently an excess of well capacity that accommodates 460 future residential equivalent homes (Project Mallard is 70 equivalent homes)
    - Water Tower Evaluation Assumes a Third 600 gpm well is provided after 460 equivalent new homes.
- Storage (water tower volume) to meet fire protection needs on days of maximum customer demands, with the tower starting at lowest operating elevation

- Currently a shortage of 230,000 gallons of water tower volume to meet needs, including recommended minimum fire demands at 3500 gpm for 2 hours

- When new 600 gpm well is provided (after 460 new residential home equivalents):

  - 250,000-gallon additional tower serves 720 new residential equivalent homes
  - 300,000-gallon additional tower serves 1,100 new residential equivalent homes

	Current Conditions (2021)	With 460 New Residential Equivalent Homes [1]	With 460 New Residential Equivalent Homes AND New 600 gpm well	With 720 New Residential Equivalent Homes AND New 600 gpm well	With 1100 New Residential Equivalent Homes AND New 600 gpm well
Supply Requirements					
Residential Equivalent Homes (70 gpd per person, 2.5 ppl per home)	691	1151	1151	1411	1791
Average Day Use (gallons)	121,000	201,500	201,500	247,000	313,500
Average Day Demand (gpm)	84	140	140	172	218
Maximum Day Demand, x2.0 (gpm)	168	280	280	343	435
Peak Hour Demand, x4.0 (gpm)	336	560	560	686	871
Reliable Supply Capacity, Largest Well Out of Service (gpm)	280	280	880	880	880
Total Additional Supply Required to Meet Max. Day Demand (gpm)	-112	**0**	-600	-537	-445
Storage Requirements					
Fire Protection Storage, optimum 3500 gpm at 2 hours [2](gallons)	420,000	420,000	420,000	420,000	420,000
Peak 2-Hour Demand Storage (gallons)	30,250	50,375	50,375	61,750	78,375
Pump Operation Storage [3] (gallons)	60,500	100,750	100,750	123,500	156,750
Less Reliable Supply Capacity at 2 hours (gallons)	-33,600	-33,600	-105,600	-105,600	-105,600
Total Storage Requirement (gallons)	477,150	537,525	465,525	499,650	549,525
Available Storage (gallons)	250,000	250,000	250,000	250,000	250,000
Total Additonal Capacity Required to Meet Opt. Fire Prot.(gallons)	**227,150**	**287,525**	**215,525**	**249,650**	**299,525**

Notes: [1] Project Mallard water use is 175 equivalent people = 70 equivalent homes
[2] 2 hour duration is recommended minimum, 3 hour duration is recommended optimum, 3-hour duration requires additional 200,000 gallon storage
[3] Assumes two pump operations per day

Water System Improvements – POTENTIAL FIRE FLOW (GPM) ANALYSIS

A water model (WaterCAD) is used to evaluate potential fire flow throughout the distribution system. The water model was updated for recent developments and calibrated relative to field measured flow data.

New improvements were evaluated in the model, including new large diameter water main/loops, a new water tower near the Project Mallard site (at elevation of the existing tower) and a new water tower south of IH 94 (at higher elevation to serve all areas in Urban Growth Boundary), and combinations of these.

- Potential fire flow (gpm) analysis to meet fire protection needs shows:

  - Currently, conditions do not meet commercial (2500 gpm) and industrial (3500 gpm) recommended fire flows

  - Several options are evaluated to meet recommended flows, including a new loop from the south development area to 130th and Packer Drive existing 14" main, and a new tower either near Project Mallard or south of IH 94.

Location	Target Fire Flow (gpm)	Existing Conditions (gpm)	New 12" loop to 130th/Packer (gpm)	New 16" loop to 130th/Packer (gpm)	New Tower near Project Mallard site (gpm)	New Tower near Project Mallard site and 16" loop to 130th/Packer (gpm)	New Tower south of I-94 (gpm)	New Tower south of I-94 including a 16" loop to 130th/Packer (gpm)
STH 65 and Wagner Ave (Industrial)	3500	1600	3500	4100	10,000	10,000	5,300	5,300
70th Ave at Flying J (Commerical)	2500	1500	3300	4000	4,100	6,800	6,700	8,200
247 Logistics (Industrial)	3500	1500	2800	3300	3,300	4,400	6,200	6,600
Packer Dr and 130th St (Industrial)	3500	3000	3700	3800	3,100	5,400	3,100	6,200
STH 65 and Main St (Commercial)	2500	2600	3000	3000	3,400	3,400	3,300	3,300
Hydrant South of I-94 at el. 1140 (Indu	3500	0	0	0	0	0	8,200	8,200

Note: orange = does not meet recommended flows

Water System Improvements – RECOMMENDATIONS, COST and SCHEDULE

1. The largest deficiency in the Roberts water system is water storage. It is recommended to provide a second water tower, at 300,000-gallon capacity. There is a current opportunity with the Project Mallard site, to provide land for the water tower and to possibly share in the cost, as their warehouse needs a 250,000-gallon private storage tank if the Village cannot meet their required fire protection needs.

    - 250,000-gallon, meets minimum recommendations for fire flow and duration (storage)

        - third well needed with 460 new residential equivalent homes
        - with third well, serves 720 new residential equivalent homes

	Project Cost	Schedule
250,000-gallon Water Tower	$2,000,000	Not Feasible for Village (PSC approvals, public process) BUT may be possible for Project Mallard to construct as a private tower and Village to purchase/take over

    - Recommended: 300,000-gallon, meets minimum recommendations for fire flow and duration (storage)

        - third well needed with 460 new residential equivalent homes
        - with third well, serves 1,100 new residential equivalent homes

	Project Cost	Schedule
300,000-gallon Water Tower	$2,250,000	Not Feasible for Village (PSC approvals, public process) BUT may be possible for Project Mallard to construct as a private tower and Village to purchase/take over

2. FUTURE - As development reaches a water use equivalent of 460 new home equivalents (Project Mallard is 70 of these new home equivalents), a third minimum 600 gpm well is recommended.

	Project Cost	Schedule
600 GPM Well	$1,600,000	As Development Occurs

3. FUTURE - With the new water tower, a future water main outer loop (to 130th Street and Packer Drive) is recommended, to improve fire flows and provide system redundancy.

	Project Cost	Schedule
Water Main Loop 130th Street and Packer Drive	$2,000,000	As Development Occurs