

**CHARTER TOWNSHIP OF CHESTERFIELD
REGULAR BOARD MEETING
TO BE HELD AT THE MUNICIPAL OFFICES, 47275 SUGARBUSH RD.
CHESTERFIELD, MI 48047
586-949-0400**

**October 17, 2016
7:00 P.M.**

AGENDA

- 1. CALL TO ORDER**
- 2. PLEDGE OF ALLEGIANCE: Anchor Bay High School, Junior Air Force ROTC.**
- 3. ROLL CALL**
- 4. PRESENTATION: FRIENDS OF CHESTERFIELD POLICE**
- 5. CONSENT AGENDA:** All items under the Consent Agenda are considered routine by the Board and will be enacted in one motion. There is no separate discussion of these items. If discussion of any item(s) is required by a Board Member, it will be removed from the Consent Agenda and considered separately. Public comments on the Consent Agenda items are permitted.
 - A)** Approval of the Agenda (with Addendum if necessary).
 - B)** Approval of the Minutes of the Regular Board Meeting of October 3, 2016.
 - C)** Approval of the Payment of Bills as submitted by the Finance Department.
- 6. REGULAR AGENDA:**
 - A)** Approve a request from the Department of Public Works to solicit Request for Proposals, RFP, for a new Supervisory Control and Data Acquisition system, SCADA.
 - B)** Approve the sale of property, parcels #015-09-28-326-006, #015-09-28-326-007 and #015-09-28-326-008, to David Morelli of Morelli Custom Homes, LLC for \$38,250.00.
 - C)** Approve the Planning Commission's recommendation to rezone parcel ID# 09-27-101-020 and 09-27-101-021 located at the northwest corner of Jefferson Ave and Mallard from RM-3 (Multiple Family Residential) to R-2 (Two Family Residential).
- 7. ADDENDUM: (If Necessary)**
- 8. PUBLIC COMMENTS: (Five-Minute Time Limits)**

9. BOARD COMMENTS:

10. ADJOURNMENT:

NEXT REGULAR BOARD MEETING IS TUESDAY NOVEMBER 1, 2016 AT 7 P.M. THE DEADLINE FOR THE SUBMITTAL OF ITEMS FOR THE AGENDA IS NOON WEDNESDAY, OCTOBER 26, 2016. IF YOU HAVE ANY QUESTIONS, PLEASE CALL 949-0400 EXT. 5.

The Charter Township of Chesterfield fully embraces the spirit and letter of the law as it pertains to the American with Disabilities Act. In accordance with the law, any individual who needs accommodation is asked to contact the Clerk's Office during normal business hours at 586-949-0400 ext. 5. To provide appropriate accommodation, the Clerk's Office needs two (2) business days notice prior to the meeting.

POSTED: October 13, 2016



**Charter Township of Chesterfield
Department of Public Works**

52216 Sierra Dr., Chesterfield, MI 48047
Phone 586-949-0400 ext.3 Fax 586-949-3872

October 5, 2016

Township Board
47275 Sugarbush
Chesterfield, MI 48047

Re: Request for approval to solicit a request for proposal (RFP) to update DPW SCADA system

Honorable Board Members:

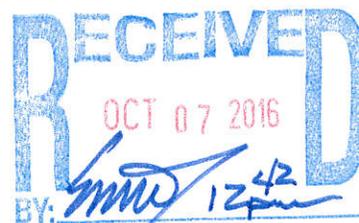
Chesterfield Township DPW is requesting approval to solicit a RFP to upgrade our outdated Supervisory Control and Data Acquisition (SCADA) system that monitors our sanitary sewer lifts stations and our master water meter pits throughout the township.

The SCADA system was installed brand new in 2005. The software is currently running on Windows XP, which Microsoft no longer makes updates for. The desktop PCs are also 10 years old, which is essentially obsolete in today's computer world. The system also requires a POTS line due to the modem we have to use to call our on-call phone for emergency alarms. In the process of updating the phone system, all POTS lines were eliminated and all other phone numbers were ported to the new system, which our SCADA software cannot handle. We have the system currently working, but it is in need of a drastic update to meet today's standards of technology.

We have a Request for Proposal (RFP) drafted (see attached) and ready to send out to vendors via MITN. Please advise us of your decision so we may get started on the bid process as soon as possible.

Sincerely,

Kevin J. Johnson
Assistant Superintendent
Chesterfield Township DPW





**CHESTERFIELD TOWNSHIP
SCADA MONITORING SYSTEM
AND PUMP CONTROLLER**

October XX, 2016

INTRODUCTION AND SUMMARY

The Charter Township of Chesterfield DPW is soliciting qualified bids to upgrade and host our Supervisory Control and Data Acquisition (SCADA) system for seven (7) sanitary sewer lift stations, one (1) storm sewer lift station, two (2) pH monitoring stations, and five (5) master water meter stations. The current SCADA system is run on an antenna system, where the main computer polls each station. We are looking to keep this system and not go to cellular service.

The DPW is looking to upgrade the software and add alarms that are not in the current system. These alarms include:

- Phase loss alarms
- Power fail alarms
- Communication fail alarms

Further information regarding pump operation is required in the new system. Addition information required that is not currently included will pertain to pump operation, such as electric output, efficiency, RPM, etc.

All of our current stations run on a radio system, where the signal is transmitted to a central PC at the DPW, which polls all of the stations for activity.

The current program being used is WonderWare and operates on Windows XP.

The Chesterfield Township DPW is looking to use Trihedral VTSCADA software due to its simplicity of pulling data into Excel spreadsheets that can be used by the DPW. Another reason is the fact it is non-proprietary and, in case the future deems a change in hosting providers, we could host the software on-site.

In determining a hosted SCADA provider, we would like the host:

- to utilize Trihedral VTSCADA
- to provide a list of customers that they currently host
- to provide background/experience
- to provide 24/7 customer service
- to have excellent uptime (99.95% or higher)
- to have multiple datacenters
- to have hardware redundancy

We are also looking to have two computers along with two wall-mounted 40" monitors to be able to view the SCADA system.

We are also looking for a backup internet connection for the system in case we lose connectivity with the primary connection.

SCADA MONITORING SYSTEM REQUIREMENTS

SCADA SOFTWARE

1. The SCADA software shall be TRIHEDRAL VTSCADA (www.trihedral.com) version 11.1.15 or greater.

GENERAL

1. The hosted SCADA service shall be provided by a company that is regularly engaged in the work as specified herein. The infrastructure for supporting the Hosted SCADA must have been in place for five years and be supporting a minimum of 250 customer sites at the time a proposal is submitted. A list of 20 customer references shall be submitted with the proposal. References must be for hosted SCADA customers. The provider shall prove 99.95% uptime within the last year by a 3rd party organization.
2. SCADA shall employ computerized monitoring software that facilitates communications with most standard field hardware devices using industry-standard protocols. Software shall employ a graphical user interface (GUI) as the Supervisor Control and Data Acquisition (SCADA).
3. Software shall be compatible with a COTS (commercial off-the shelf) PC running Microsoft Windows 7, Windows Vista, Windows XP, Windows 2012, Windows 2008 Server or Windows 2003 server.
4. Software shall support 32-bit and 64-bit Windows operating systems.
5. Software shall support a wide range of user devices, including a mouse, touch-screen, trackball, light-pen, and keyboard.
6. Software shall support multi-monitor graphics cards.
7. Any computer running a licensed copy of the software shall be capable of simultaneously performing as both an application server and as a client user interface.
8. Software shall support automatic server failover
9. Software shall support an automatic, orderly shutdown when primary power is lost and system continues to run on UPS power.
10. Software shall be configured such that, in the event power is lost and subsequently restored, server computers will automatically restart and begin full operation without user intervention.
11. Software shall include an integrated security system supporting an unlimited number of user accounts. Security shall be privilege and role based rather than level based.
12. System users with appropriate security privileges and system configuration training shall be capable of making changes to the application without requiring the software supplier's assistance. No lockout mechanisms or passwords shall be withheld from the final customer.

13. System shall provide a mechanism to limit client access to specific IP addresses.
14. Software shall allow changes to be fully tested in runtime using live I/O before they are deployed to other networked servers and clients.
15. Software shall include the following integrated components. These components shall not require separate software to be installed.
 - a. I/O drivers
 - b. Alarms management and alarms history
 - c. Historian
 - d. Real-time and historical data trend creation
 - e. Report generation
 - f. Application backup tool
 - g. Security management
 - h. Support for networked applications
 - i. Support for server redundancy
 - j. An object-oriented scripting language.
16. Software shall offer the following components. These components shall not require separate software to be installed and shall share the application's security management.
 - a. Browser-based client (i.e. Internet client)
 - b. Alarm dialer
 - c. Mobile device (e.g. iPad, smart phone) client
 - d. Application version control
 - e. OPC and ODBC methods for software programs to access data (real-time and historical) and alarms
17. Software shall not require server level computers for any system components.
18. Integrated software help manuals shall be provided to assist operators and administrative personnel with operational and configuration tasks. The latest versions of all manuals shall be made available for download from the software manufacturer's website.

HOSTED SCADA SERVICE

1. The Hosted SCADA Company shall be available to the Charter Township of Chesterfield DPW 24 hours per day, 7 days per week. At minimum the Hosted SCADA Company shall have a controls team with a least three (3) Controls Engineers, two (2) Controls Technicians, one (1) Controls Coordinator, and seven (7) field service technicians.
2. The hardware and software of hosted SCADA service shall be installed into two separate facilities.
3. The Main Hosted SCADA facility shall include the following:

- a. Facility shall be located in Michigan
- b. Facility shall be in a location historically free from natural disasters such as hurricanes, floods, earthquakes, and tsunamis. The Facility shall be above the 500 year flood plain.
- c. Facility shall be monitored by facility staff 24 hours a day, 365 days a year.
- d. Facility shall have doorways managed by a card access system with dual authentication with biometric scanner for physical access which records all access. Security alarms to elicit an armed response.
- e. Facility at a minimum shall be AICPA SOC2 Type II audited.
- f. Facility at a minimum shall have nine redundant fiber paths for internet connectivity leading to multiple upstream carriers, including, but not limited to: AT&T, Comcast, Comlink, Level3, US Signal, and Waveform Tech, with connectivity capabilities to CenturyLink, Orange Business, Sprint, Verizon, and XO Communications.
- g. Facility cooling and HVAC at a minimum shall be configured to ASHRAE standards with 20 degree differential between hot and cold isles.
- h. Facility at a minimum shall utilize an N+N UPS system with independent power delivery from transfer switch to racks. Total battery life shall be at least 20 minutes at full load. UPS system at minimum to meet or exceed concurrent maintainability tier II requirements of the Uptime Institute.
- i. Facility at a minimum shall be FEMA rated and utilize N+N generator backup system. Including two diesel generators and two 2,000 gallon fuel tanks. System must run for at least 96 hours under full load before refueling.
- j. Facility at a minimum shall utilize a waterless fire suppression system.
- k. Facility at a minimum shall have an advanced security framework to safeguard both the interior and exterior of the facility. At a minimum the system shall track all environmental functions including room temperature, humidity, and equipment conditions.

4. The Backup Hosted SCADA facility shall include the following:

- a. The backup facility shall include identical SCADA hardware and software as the main facility.
- b. The backup facility SCADA software shall be securely synced with the main facility SCADA software at all times. This includes SCADA software programming and historical data logging.
- c. The backup facility shall continuously monitor the main facility and act as a hot-backup when the main facility is unavailable. The backup facility shall perform all hosted SCADA functions immediately and automatically.
- d. The backup facility shall be on a different power grid than the main facility.
- e. The backup facility shall be owned by the hosted SCADA provider.

5. The hosted SCADA system shall include the following hardware:

- a. Main runtime SCADA server utilizing Server 2008 or Server 2012 operating system and server features.
- b. Backup runtime SCADA server utilizing Server 2008 or Server 2012 operating system and server features.

- c. Twelve (12) available voice modems for alarm callouts; six (6) voice modems to be installed on main runtime server; six (6) voice modems to be installed on backup runtime server.
 - d. Four (4) different voice phone line technologies shall be used: Standard POTS lines, cellular voice lines, digital PBX lines, and VOIP lines.
6. The main SCADA system and backup SCADA system shall have scheduled plans in place to monitor and ensure the uptime and stability of the Hosted SCADA service. These services shall be performed by 3rd parties:
- a. *IT Infrastructure Audit* – The hosted SCADA main and backup IT infrastructure shall be audited yearly by a 3rd party IT professional. Recommendations by the 3rd party IT professional shall be implemented within 6 months.
 - b. *Disaster Recovery Testing* – The hosted SCADA main and backup IT infrastructures shall be tested against a disaster recovery plan yearly. The disaster recovery plan shall be reviewed and tested by a 3rd party IT professional.
 - c. *Uptime Monitoring of Hosted SCADA Service* – The hosted SCADA main and backup IT infrastructures shall be monitored by a 3rd party company every 5 minutes. If the 3rd party company is unable to access the main SCADA system or backup SCADA system, the 3rd party shall notify the hosted SCADA Company immediately.
 - d. *IT Infrastructure Health Monitoring* – The hosted SCADA main and backup IT infrastructure shall be monitored by 3rd party software. If the 3rd party software identifies an issue with the IT infrastructure, another 3rd party voice callout provider shall notify the hosted SCADA company immediately.

I/O COMMUNICATIONS

1. The hosted SCADA system shall provide the ability to communicate to customer equipment using cellular communications. The cellular communication shall incorporate the following:
 - a. Contracts with multiple service providers including Verizon, AT&T and Sprint.
 - b. Cellular data to be private and secured by service provider. Hosted SCADA system shall have VPN access to each cellular service provider to securely access cellular data.
2. Communications diagnostics tools shall be included to aid in the visualization of proper communications. Tools shall include methods for monitoring communication statistics and reporting errors.
3. Software shall be capable of supporting local I/O communications (i.e. on the primary application server) or distributed I/O servers (i.e. on computers other than the primary server.) There shall be no limit to the number of allowable redundant I/O servers for any driver.
4. Software shall be capable of pooling modems connected to one of more servers, for use in I/O communications.
5. Software shall support multiple communications protocols over a single communications port. Communications drivers shall be capable of sharing communications equipment, such as a radio tower (where there is no difference in radio frequency) or a pool of shared modems.

6. Software shall support redundant physical links to any field device, such as primary connectivity via Ethernet and redundant connectivity via serial port. Redundant links shall support similar or different protocols.
7. I/O drivers shall be available at no additional cost for a variety of protocols, as follows.
 - a. Modbus (TCP, RTU, ASCII, Plus, Serial)
 - b. AB DF1
 - c. CIP
 - d. DNP3
 - e. Omron Hostlink and FINS
 - f. Bristol Babcock BSAP and IBP
 - g. GE SNP and SNPX
 - h. SNMP
8. OPC Client connectivity shall be available at no additional cost for drivers not included in the preceding list. This shall support OPC Servers from developers.
9. DDE Client connectivity shall be available at no additional cost
10. Software shall support the development of additional I/O drivers where necessary.
11. To optimize system performance, software must support multi-threaded operations for I/O drivers.
12. Software shall provide tools for polling remote devices (e.g. RTUs) directly. Software shall allow real-time tuning of each device's polling frequency without interrupting the polling cycle or restarting the application.
13. To optimize I/O communications for telemetry applications, the polling order shall be configurable and polling shall be asynchronous (if permitted by the remote telemetry unit), allowing the system to continue its polling sequence in the event of a communications error with the remote device.
14. Software shall support radio diagnostics drivers for the following radio devices;
 - a. Dataradio/Calamp
 - b. MDS
15. Software shall support writing to multiple output tags via a single write request. This shall allow writing a set of default values to a set group of field device registers.
16. Software shall support rewriting the last written value to an output.

SYSTEM CONFIGURATION

1. Configuration files and configuration history shall be encrypted.
2. Change deployment shall be either automatic or manual. User's choice.
3. Software shall allow configuration changes to be reviewed before they are deployed. Users shall have the option to roll back specific changes and deploy others.
4. Software shall be capable of on-line configuration. That is, changes to tag configuration, server lists, user displays, security, reports development and I/O communications shall be carried out without stopping and restarting the application or the computers and without recompiling the application.
5. Software shall be capable of testing on-line configuration changes to tags and screens using live data before changes are deployed.
6. Software shall allow multiple users to configure an application simultaneously.
7. Software shall be capable of offline changes which can be manually imported to the running application and extracted automatically.
8. Software shall allow changes to the application server lists without requiring the application to be restarted.
9. Any client computer not running the application while changes are being made shall automatically download newly deployed changes from the primary application server when the client is restarted.
10. All application servers and clients shall automatically synchronize with the primary application server. No manual file duplication shall be required.

VERSION CONTROL

1. Software shall offer integrated version control, such that a complete version history exists for any application. The entire version history shall reside in an encrypted repository.
2. The version history shall include the time and date when the change was applied, the user who deployed the change and any comments entered by the user when deploying this change.
3. The version history shall allow review of any incremental application changes, including displays, graphics, tags and scripts for each deployed version.
4. A tool shall be available to determine what versions of the application each (full installation) client or server computer is currently running.
5. Software shall allow rollback to a previous version of the application without stopping and restarting the application.

TAG DATABASE

1. Software shall be tag-based.
2. Tag structures shall be supported, such that a custom tag structure can include a set of typical I/O tags (e.g. a lift station.) Structures shall support a base address such that its I/O may use referential addressing.
3. Tag structures shall be treated as templates in that any structure can be copied and pasted to create any number of identical structures.
4. A browser shall be provided for creation, modification and deletion of each individual tag.
5. The tag browser shall include a summary of all tags' current values.
6. Software shall provide a tool for export of all application tags to Microsoft Office applications for bulk tag changes and for import of all tags from the same programs.

GRAPHICS AND DISPLAYS

1. Software shall not limit the number of application displays that can be created.
2. Software shall support both animated and static graphic objects. Animated graphic objects shall provide real-time process information to the user via displays.
3. Software shall include a standard library of graphics and shall allow additional graphical elements (e.g. BMP, JPG, PNG) to be inserted into the library.
4. Software shall support the following display sizing and placement features;
 - a. Minimum and maximum display sizes for each display.
 - b. Resizing, minimizing, and maximizing.
 - c. Automatic resizing displays to the workstation resolution of each user viewing the application. This shall be supported on both fully installed and browser clients.
5. Process displays shall be event-driven, in that data will be delivered to client computers by the server immediately upon receipt. Client computers will not poll the server for new data.
6. Standard tag types with graphics shall be provided for the following;
 - a. Analog/digital inputs
 - b. Analog/digital outputs.
 - c. Retentive counters with reset. (Values should persist if power is lost and subsequently restored.)
 - d. Retentive totalizers with reset. (Values should persist if power is lost and subsequently restored.)

- e. Multi-position switches. Position changes sent to field devices must include feedback of status received and verification of field action taken. For example, a switch intended to turn on a pump shall generate an alarm if the pump running status is not received within a predefined timeout.
 - f. Alarms
7. Software shall include pre-built displays for standard SCADA features. The following pre-built displays shall be provided as a minimum;
- a. Alarm display that can be filtered by name and includes current, unacknowledged, disabled and history
 - b. Trending and tabular viewing of historical data
 - c. Report creator
 - d. Operator notebook
8. Software shall include the following navigation tools
- a. A menu for navigating from one display to another. Menu shall be configurable to allow logical grouping of displays where necessary.
 - b. Hot box for navigating to a specific display
 - c. Button for navigating to a specific display
 - d. Browser-like forward and reverse buttons to view 10 (or more) previously viewed displays
9. Software shall allow color translations, changing brightness, contrast and transparency for all graphical library objects. An easy-to-use integrated interface shall be provided to facilitate these changes.
10. Software shall allow calculations to be associated with each graphic object to facilitate movement, visibility and sizing.
11. Software shall allow multiple objects to be saved as a grouped template. The following template capabilities shall be supported;
- a. A template may be associated with a tag structure.
 - b. Each new instance of the template will inherit the properties of the template, such that changes to the template will automatically update all instances created from it.
 - c. The template may have any number of parameters, including tags and text values, which can be used to animate objects within the template. Each new object created from the template may include different parameters.
 - d. Templates may be imported from other projects
 - e. Copy/paste/rename/delete for any template
 - f. Ungrouping of any instance of the template.
12. Project displays shall be treated as template displays. The following capabilities shall be supported;

- a. A template display may be associated with a tag structure.
 - b. Each new instance of the template will inherit the properties of the template, such that changes to the template will automatically update all instances created from it.
 - c. The template may have any number of parameters, including tags and text values, which can be used to animate objects within the template. Each new object created from the template may include different parameters.
 - d. Templates may be imported from other projects
 - e. Copy/paste/rename/delete for any template
13. Means shall be provided to allow the operator to print graphical displays.
14. Software shall support flagging tags as 'questionable data' or 'not commissioned', though they will continue to display the incoming values. These flags shall be removable by users with sufficient privileges.
15. Software shall include an object-oriented graphics and animation editor with the following capabilities:
- a. Drawing tools with CAD-like capabilities for drawing animated and static objects and text. Developers shall have access to a user-configurable grid for use in positioning objects.
 - b. Editing tools for adding, aligning, layering, sizing, copying, cutting, pasting, and deleting objects.
 - c. Creating graphics that rotate/move at a rate corresponding to the value they are displaying
 - d. Importing 3D graphic images rendered using external software tools
16. There shall be no limit to the number of animation graphics that can be used to represent the same I/O tag.
17. Software shall support background bitmaps on graphical pages
18. Software shall be capable of displaying multiple graphical windows simultaneously.

HISTORICAL DATA STORAGE

1. Software shall include an integrated, no-cost historian and have a redundant MSSQL historian for backup and custom reporting.
2. Software shall be capable of logging up to 10,000 values per second.
3. A synchronization scheme shall be included such that an exact copy of all historical data resides in two computers. The scheme shall provide synchronization of data between the software's proprietary historian and MSSQL. Software shall be capable of synchronizing up to 4000 values per second across each historian type.

4. If, at any time a historian is out of service for duration of time, this historian shall be automatically resynchronized with the historian holding the most recently logged data.

HISTORICAL DATA ANALYSIS

1. Any tag configured as an Analog Status or Digital Status tag shall be automatically available for trending on screen displays.
2. Software shall provide a tool for users to generate ad-hoc trends of historical data and shall allow these trends to be saved for later recall.
3. Software shall display historical and real-time data in both plot and tabular format. Historical and real-time plotted values shall be shown in a continuous, uninterrupted, scrolling fashion.
4. The plot's time frame shall be operator selectable from a minimum of one second to five years. Time intervals shall be clearly marked on the x-axis with date/time stamps and shall scroll with the data.
5. Scaling of each displayed tag value shall be either user-configurable or shall follow the scaling of the tag. Changing the scaling of the tag plot shall not affect the scaling of the tag.
6. User shall be able to see the value of plotted tags for any selected point in time
7. Software shall be capable of displaying an unlimited number of analog and digital tag plots on a single display. Color shall be used to differentiate between tags. Means must be provided to quickly determine the name and description of each tag displayed.
8. Means must be provided for the following;
 - a. Stop/pause scrolling
 - b. Zoom in/out on the time (x) and value (y) axis'
 - c. Pan/Scroll along the time axis or select a particular date to display
 - d. Move analog tag plots vertically (in the value (y) axis), either individually or as a group
 - e. Display statistical data, including average, minimum and maximum values, for each plot.
9. Ability to print displayed plots shall be provided.
10. Ability to associate an operator note with a particular point in time shall be provided.
11. Trend data shall be exportable to comma separated value (.csv) file or directly to a database, for use by 3rd-party data analysis software.
12. Software shall include simple methods for generating historical calculations, such as average flow over last 24 hours.

ALARMS AND EVENTS MANAGEMENT

1. A synchronization scheme shall be included such that an exact copy of all alarms and events data resides in two computers.
2. If, at any time an alarms/events server is out of service for duration of time, it shall be automatically resynchronized with the more updated alarms/events server.
3. Software shall allow the application to be split into functional areas such that the alarms a user sees/acknowledges are determined by the areas to which the user has access.
4. Software shall support generation of an alarm or event for I/O driver loss of communications, tag value change or outside range, calculated value, user logon/logoff, excess rate of change, stale value and server startup.
5. Software shall provide user-configurable settings for deadband on analog alarms and delay on analog and digital alarms.
6. Each alarm and event shall be written to the application's alarms/events history.
7. Software shall support printing of alarms/events created over a range of dates/times.
8. Alarms and events records shall include;
 - a. Time/Date stamp
 - b. The name and description of the alarm tag
 - c. Priority
 - d. Status of Alarm (i.e. Active, Acknowledged, Cleared). Alarm acknowledgement records shall include the name of the user.
9. Users shall be able to filter the alarms display to show current, unacknowledged, disabled or historical alarms/event. Alarms shall be filterable by priority or by alarm areas/groups.
10. Software shall support an unlimited number of alarm priorities and shall allow unique annunciation sounds and colors for each.
11. Alarm annunciation shall be configurable to use alarm tones, text to speech descriptions, or sound files.
12. Users must be notified, both visibly and audibly, of the occurrence of an alarm, regardless which display is presently being viewed.
13. Alarm acknowledgement shall immediately be propagated to all user interfaces.

ALARM DIALER

1. The dialer shall perform alarm annunciation via dial-out over voice modem (using text-to-speech), text message, email and/or alphanumeric pager. It shall support alarm acknowledgement during voice modem calls and via email.

2. The dialer shall be configurable from the SCADA software configuration license and be automatically synchronized with the tag database at all times.
3. Email messages shall support outgoing mail with transport layer security (e.g. Gmail, Yahoo Mail).
4. The dialer shall share the SCADA system security, requiring users to enter a user name and security code access data and to acknowledge alarms.
5. The dialer shall be capable of annunciating alarms to rosters of users with up to 30 contacts per roster. An unlimited number of rosters shall be supported.
6. The dialer shall be able to make rosters active/inactive manually or automatically. Changes to rosters and active/inactive status changes shall be made without stopping and restarting the application or computer.

SECURITY

1. Software shall include a security system with privilege and role based user accounts. Level-based access shall not be acceptable.
2. Security system shall support an unlimited number of user accounts, roles, and access privileges.
3. System shall allow creation of an unlimited number of additional security privileges where necessary.
4. User passwords shall be stored in an encrypted format.
5. User passwords must be configurable to require a minimum length, contain alphanumeric characters, and expire after a pre-set period.
6. System shall allow changes to user accounts, roles and privileges while the application is running. Changes shall become effective immediately. Networked users whose accounts have been altered shall be affected by the changes immediately without requiring application restart.
7. User login and logout activity shall be recorded in the application event log.
8. Disabling accounts after X failed attempts shall be supported.

ELECTRIC OPERATOR NOTEBOOK

1. Software shall include a networked electronic operator notebook. All notes entered into the notebook shall be immediately viewable from all clients and servers.
2. Each note shall be recorded with a time/date stamp and the name of the user's account.
3. Notes shall be encrypted to minimize the risk of tampering.

4. Users shall be permitted to select any date to review notes generated on that date.
5. Software shall support printing of notes created over a range of dates/times.

REPORT GENERATION SYSTEM

1. Software shall be capable of producing reports using historical data. Reports may be created for one-time use or saved for reuse.
2. Report generation shall be invoked either on demand, by a monitored event, or on a scheduled basis.
3. The report generation system shall be field configurable, allowing an operator to create, modify and generate reports and export data to third party software. The report generation system shall be capable of displaying reports to the user interface display or of exporting files per the following:
 - a. To a comma separated value (.csv) file
 - b. To a text file
 - c. To an ODBC-compliant database
 - d. To any direct-connected or networked printer
 - e. Directly to a new MS Excel spreadsheet
 - f. Directly to a new MS Excel template.
 - g. To an e-mail
4. Reports shall be able to display any analog, digital or calculated tag data from the historical database.
5. The hosted SCADA system shall perform custom reporting utilizing templates as needed by the customer. The system shall be able to report using MS Excel utilizing custom VBA coding, or by using XLReporter software.

INTERNET CONNECTIVITY

1. The hosted SCADA system shall provide a custom domain name for the customer.
2. The Internet Client shall be protected with Secure Socket Layer (SSL) security.
3. The Internet Client shall require users to enter a user name and security code to run the client.
4. Internet connectivity shall not require the installation or configuration of Internet server software (e.g. Microsoft IIS, Apache).
5. On-line configuration changes shall be pushed immediately to all Internet client interfaces without requiring the browser interface to be restarted or refreshed.

6. Internet clients shall require that all web browsers (Chrome, Firefox, etc.) have the ability to communicate with the application. Internet clients shall require no software to be manually installed.
7. Internet clients shall cache displays in order to reduce display access time.
8. Internet clients shall have graphical displays identical to the standard full-installation client and shall not require separate development time or a separate development interface. The automatic display generation process shall not distort the graphical layout of any display.
9. Tools shall be provided to monitor Internet client connectivity and to disconnect users when necessary.
10. The hosted SCADA system shall provide FTP access to a secure area of the hosted servers. This functionality provides electronic storage for any document(s) selected by the customer.

HANDHELD DEVICE CONNECTIVITY

1. Handheld device connectivity shall share the SCADA system security, requiring users to enter a user name and security code.
2. Software shall support the following functionality via hand-held devices, such as iPhone, iPad, and Android.
 - a. Alarms access and acknowledgement
 - b. Analog and digital input monitoring
 - c. Analog and digital output control
 - d. Real-time and historical data trends
3. Zoom in (pinch) and zoom out shall be supported for historical data trends.

SCREEN DISPLAY

1. The software shall include 3D models of customer pumps. The models shall be developed in CAD software. The pumps shall show a gray impeller when not running and a blinking red impeller when there is an alarm. The pumps shall show a green impeller, with animation for rotation, when running.

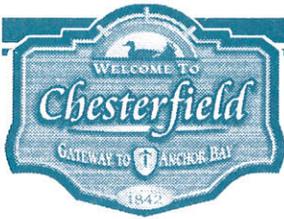
SERVER REDUNDANCY AND LOAD BALANCING

1. A minimum of three levels of redundancy for all application services shall be supported.
2. Software shall support automatic failover from a primary server to one or more backup servers for all application services. No manual intervention shall be required.
3. Software shall support distribution of services across any number of computers to facilitate load sharing.

4. Software shall automatically redirect internet client connections to the internet server with the least active connections.
5. All servers shall be aware of which server is in control of each software process. No two servers shall perform the same function at the same time (e.g. I/O communications to a specific device, incrementing a totalizer.) This ensures efficient use of network communications and synchronization of data across the SCADA network.
6. Software must not require each redundant server to use a second network card to monitor the status of the primary server.
7. Software shall support redundant networks and shall be able to use these for load distribution when both are available. In the event one network connection is lost, network communications shall automatically fail-over to the second connection.

APPLICATION UPGRADES / SUPPORT / DIAGNOSTICS / DEBUGGING

1. Users must have the capability to upgrade the base software product as new versions become available. Such upgrades shall not require significant changes to the existing application.
2. Support shall include phone, email, user forum and remote access methods.
3. Training shall be available for users of all levels (i.e. Operators, Developers, Administrators)
4. Diagnostic/debugging tools shall be provided for:
 - a. Server-to-server and server-to-client activity monitoring within the SCADA network
 - b. Computer resource usage for all servers and full installation clients
 - c. Communication driver activity monitoring
 - d. Script language debugging



47275 Sugarbush • Chesterfield Twp., MI 48047

Agenda Item # B

October 12, 2016

Board of Trustees



Re: Sale of Cotton Road Property

Dear Board Members:

It is my recommendation to accept the sole bid from Morelli Builders, in the amount of \$38,250.00, to purchase the property located on Cotton Road. The parcel ID numbers are as follows: 15-09-28-326-006, 15-09-28-326-007, and 15-09-28-326-008.

Thank you,

Michael E. Lovelock

Phone: (586) 949-0400 Fax: (586) 949-4108

Michael Lovelock - *Supervisor* • Cindy Berry - *Clerk* • Linda Hartman - *Treasurer*
Trustees: Hank Anderson • Christine Bell • Brian Scott DeMuyck • David Joseph



Agenda Item # *C*



October 17, 2016

Charter Township of Chesterfield Board of Trustees
47275 Sugarbush
Chesterfield, Michigan 48047

RE: Rezoning #338

Dear Honorable Board Members:

The Planning Commission, at their regularly scheduled meeting of October 11, 2016 reviewed the proposed rezoning located at Jefferson Avenue and Mallard, for two parcels to be rezoned from RM-3 to R2.

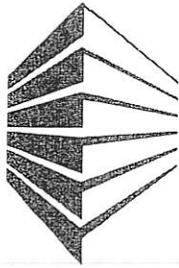
The Planning Commission would like to recommend approval of Rezoning #338 with the stipulation that the applicant split and combine the lots to create conforming lots to the R2 zoning district. The applicant would like to create a third lot on the back of the parcels creating a single family lot fronting on Mallard. The Planning Commission is recommending approval of rezoning this lot from RM-3 to R1-A, which is consistent with the neighboring home on Mallard.

Sincerely,

Paul Miller smg
Paul Miller
Planning Commission Chairman



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Community Planning & Management, P.C.
Planning Communities Since 1973

October 10, 2016

Charter Township of Chesterfield Planning Commission
47275 Sugarbush Road
Chesterfield Township, MI 48047

**Re: Frank Richardson
RZ #338
Two Parcels (ID#'s 09-27-101-020 and 021
From RM-3 (Multiple Family) to R-2 (Two Family)**

Dear Commission Members:

The properties in total are approximately 1.03 acres in size. One parcel is 60' x 250' and the other (located at the corner) is 120' x 250'.

Basic Site Information

Existing Zoning Designation: RM-3 (Multiple Family Residential)
Proposed Zoning: R-2 (Two Family Residential)

General Master Plan Designation: Single Family Residential

Surrounding Zoning Designations:

North: R-1A (Single Family Residential)
East: R-1B (Single Family Residential)
South: R-1B (Single Family Residential)
West: RM-3 (Multiple Family Residential)

Surrounding Land Uses:

North: Residence
East: Commercial
South: Office and Vacant
West: Multiple Family Unit

A comprehensive review and recommendation will be provided after the public hearing has been completed and all information has been collected and analyzed. The following is a list of some of the issues that should be addressed during the public hearing/review phase of a rezoning petition. The Planning Commission should be reminded that this list is not all-inclusive and each petition must be reviewed objectively based on its own facts. Further, it should be noted that this list should be used only as a guide in your process of "fact-finding".

1. Can the property in question be reasonably developed as currently zoned?
2. Is the proposed rezoning consistent with or contrary to the Master Plan?
3. Is the current zoning designation consistent with or contrary to the Master Plan?
4. Are the current and proposed zoning designations consistent and compatible with the surrounding zoning designations?
5. What are the land use patterns and characteristics of the surrounding area?
6. Is there sufficient land set aside within the Township zoned for R-2 uses?
7. What is the current availability and adequacy of existing utilities?
8. What will be the impact on the surrounding infrastructure if the land is developed under the requested zoning designation? Under the current designation?
9. The Planning Commission must consider every permitted use under the requested rezoning designation as well as their potential impact on the surrounding property and community.
10. Does the current zoning reasonably advance a legitimate governmental interest, that being the protection of the health, safety and welfare of the general public?
11. Is there an identifiable public economic need for this rezoning?

Planner's Recommendation: We hope the above comments will assist you in reviewing this rezoning request. If you have any questions, please feel free to contact us.

Respectfully,

COMMUNITY PLANNING & MANAGEMENT, P.C.

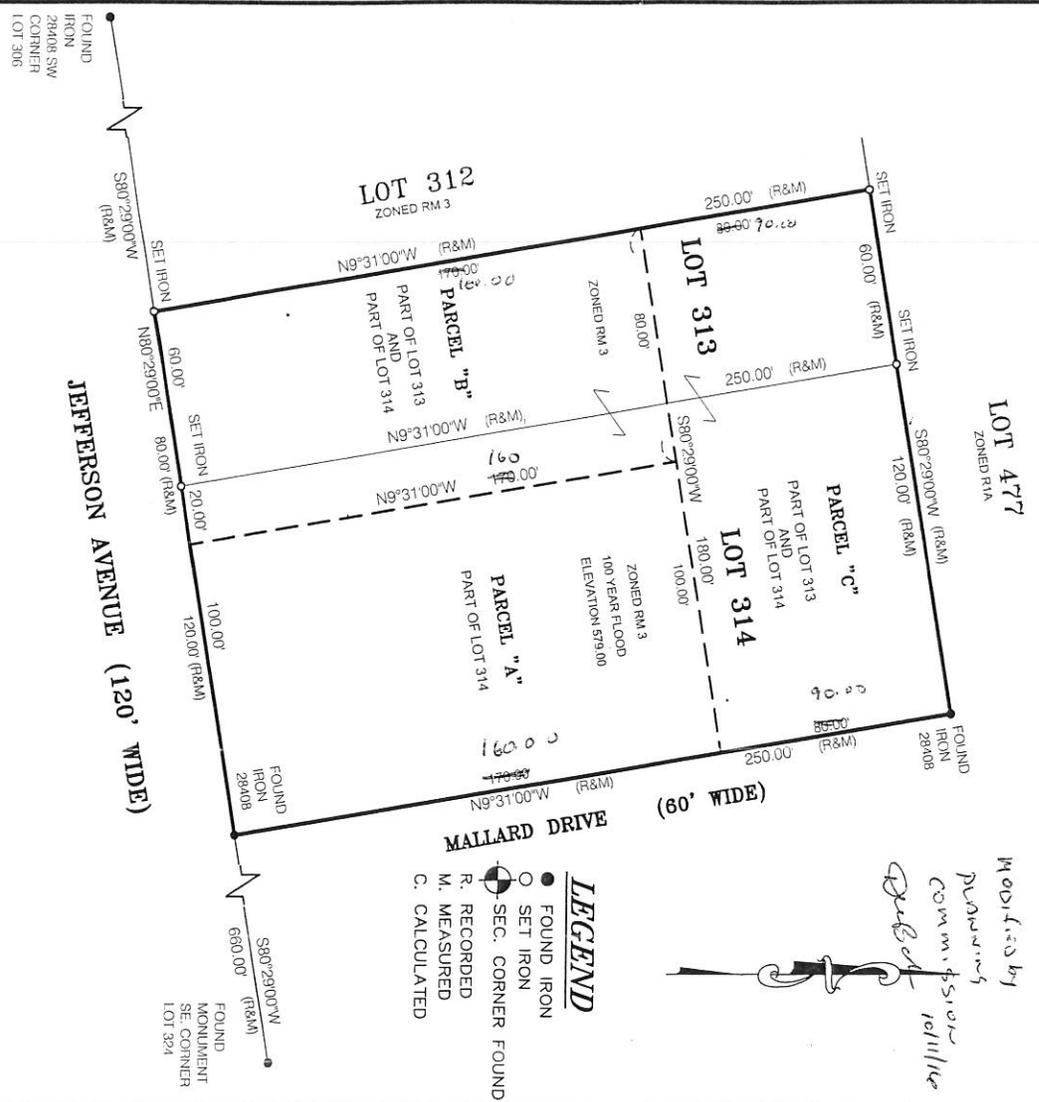


Patrick S. Meagher, AICP
Planning Consultant

CERTIFICATE OF SURVEY

PROPOSED LAND DIVISION

LOT 313 AND 314 OF "ANCHOR BAY HARBOR NO. 1"
 A SUBDIVISION OF PART OF PRIVATE CLAIMS 192 & 193 TOWN
 3 NORTH, RANGE 14 EAST, CHESTERFIELD TOWNSHIP,
 MACOMB COUNTY, MICHIGAN, ACCORDING TO THE PLAT AS
 RECORDED IN LIBER 21 OF PLATS ON PAGE 6, MACOMB
 COUNTY RECORDS.



I hereby certify that I have surveyed the parcel(s) of land described and delineated hereon; that the undisturbed field observations of said Survey were performed with an error of closure of 1 in 32,137, and that I have complied with the requirements of Section 3, Act 132, P.A. 1970 as amended.



A title search was not performed by the Client for purposes of this Survey. Therefore, no guarantee is made that any easements and/or rights of way

CERTIFICATE OF SURVEY

CLIENT: FRANK RICHARDSON
PROJECT NO.: 16-0144
DATE: 9-7-2016
SHEET 2 OF 2

DESCRIPTION OF PROPERTY

LOT 313 & 314 OF "ANCHOR BAY HARBOR NO.1" A SUBDIVISION OF PART OF PRIVATE CLAIMS 192 & 193 TOWN 3 NORTH, RANGE 14 EAST, CHESTERFIELD TOWNSHIP, MACOMB COUNTY, MICHIGAN ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 21 OF PLATS ON PAGE 6, MACOMB COUNTY RECORDS.

PARCEL A
THE EASTERLY 100.00 FEET OF THE SOUTHERLY ^{160.00}120.00 FEET OF LOT 314 OF "ANCHOR BAY HARBOR NO.1". A SUBDIVISION OF PART OF PRIVATE CLAIMS 192 & 193 TOWN 3 NORTH, RANGE 14 EAST, CHESTERFIELD TOWNSHIP, MACOMB COUNTY, MICHIGAN, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 21 OF PLATS ON PAGE 6, MACOMB COUNTY RECORDS.

PARCEL B
140.00
THE SOUTHERLY 170.00 FEET OF LOTS 313 AND THE SOUTHERLY 120.00 FEET OF THE WESTERLY 20.00 FEET OF LOT 314 OF "ANCHOR BAY HARBOR NO.1". A SUBDIVISION OF PART OF PRIVATE CLAIMS 192 & 193 TOWN 3 NORTH, RANGE 14 EAST, CHESTERFIELD TOWNSHIP, MACOMB COUNTY, MICHIGAN, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 21 OF PLATS ON PAGE 6, MACOMB COUNTY RECORDS.

PARCEL C
70.00
THE NORTHERLY 80.00 FEET OF LOTS 313 AND 314 OF "ANCHOR BAY HARBOR NO.1". A SUBDIVISION OF PART OF PRIVATE CLAIMS 192 & 193 TOWN 3 NORTH, RANGE 14 EAST, CHESTERFIELD TOWNSHIP, MACOMB COUNTY, MICHIGAN, ACCORDING TO THE PLAT THEREOF AS RECORDED IN LIBER 21 OF PLATS ON PAGE 6, MACOMB COUNTY RECORDS.


DONALD H. KING
PROFESSIONAL SURVEYOR
MICHIGAN LICENSE 30085

