# CITY OF BURTON

**BURTON PLANNING COMMISSION MEETING**

**SEPTEMBER 13, 2016**

**MINUTES**

| **Council Chambers** | **Regular Meeting** | **5:00 PM** |
|---|---|---|

**4303 S. CENTER ROAD**
**BURTON, MI 48519**

**This meeting was opened by Chairman Deb Walton at 5:00 PM.**

## A. PLEDGE OF ALLEGIANCE

## B. ROLL CALL

| Attendee Name | Title | Status | Arrived |
|---|---|---|---|
| Robert Johnson | Commissioner | Present | |
| John Benthall | Commissioner | Present | |
| Deb Walton | Chairman | Present | |
| Tom Gorang | Commissioner | Present | |
| Kevin Burge | Vice Chairman | Present | |
| Mary Ann White | Commissioner | Present | |
| Kris Johns | Commissioner | Present | |
| Ellen Ellenburg | Councilwoman | Present | |

## C. STAFF PRESENT

Amber Abbey, Planning/Zoning

Racheal Boggs, Clerk's Office

## D. APPROVAL OF MINUTES

1. Planning Commission - Regular Meeting - Aug 9, 2016 5:00 PM

| | |
|---|---|
| **RESULT:** | **ACCEPTED [UNANIMOUS]** |
| **MOVER:** | Robert Johnson, Commissioner |
| **SECONDER:** | John Benthall, Commissioner |
| **AYES:** | Johnson, Benthall, Walton, Gorang, Burge, White, Johns, Ellenburg |

## E. SITE PLAN REVIEW

1. SPR #16-43

By: Kirby Steel, Inc.
4072 Flint Asphalt Dr.
Burton, MI 48529

Re: 4072 Flint Asphalt Dr. Burton, MI 48529
59-33-100-011, M-2 Zoned

For: 64’ x 64’ Office Addition and 75’ x 180’ Shop Addition

Shawn Sage of Fenton stated he is here to answer any questions on behalf of the applicant.

Mrs. Abbey stated the administration recommends approval.

Mrs. Ellenburg stated they came before City Council. Kirby Steel has been in our community for many years and have always set a good precedence.

| | |
|---|---|
| **RESULT:** | **CARRIED [UNANIMOUS]** |
| **MOVER:** | Kevin Burge, Vice Chairman |
| **SECONDER:** | Tom Gorang, Commissioner |
| **AYES:** | Johnson, Benthall, Walton, Gorang, Burge, White, Johns, Ellenburg |

2. SPR #16-45

By: Creekwood Architecture, Inc.
1111 Creekwood Trl.
Burton, MI 48509

Re: 3495 S. Center Rd. Burton, MI 48519
59-27-651-002, 59-27-651-001
C-2 General Business Zoned

For: Addition to the Building

Rick Swihart with Creekwood Architecture of Burton is here to represent Genesys, PHO who is proposing a 2 story, 5,000 square foot addition to the existing office on Center Road. They are bringing their executive offices from Flint to consolidate here in Burton.

Mrs. Abbey stated the administration recommends approval.

Mr. Gorang appreciates and is impressed with the detail of the plans; he will be supporting the addition.

Mrs. Ellenburg asked if sidewalks will be required.

Mrs. Abbey stated if sidewalks are not already in place, they will be a requirement and should be in the plan.

Mr. Burge asked if the area where the road collapsed will propose any issues.

Mrs. Abbey stated the culvert had a hole in it, it has been repaired and has nothing to do with this addition.

Ms. White asked if there is an elevator requirement for a two story building.

Mrs. Abbey stated the building is already a two story. She asked Mr. Swihart if they intend to have an elevator put in.

Mr. Swihart said because the addition is so small, it doesn't require an elevator by code.

| | |
|---|---|
| **RESULT:** | **CARRIED [UNANIMOUS]** |
| **MOVER:** | Kevin Burge, Vice Chairman |
| **SECONDER:** | Ellen Ellenburg, Councilwoman |
| **AYES:** | Johnson, Benthall, Walton, Gorang, Burge, White, Johns, Ellenburg |

## F. ADMINISTRATIVE SITE PLAN REVIEW

1. SPR #16-40

By: Burton Bee, LLC.
19700 Hall Rd., Suite 790
Clinton Twp., MI 48038

Re: 2350 S. Center Rd. Burton, MI 48529

For: AT&T Retail Store

2. SPR #16-41

By: Matthew Church
16048 Silvercrest Dr.
Fenton, MI 48430

Re: 4507 Davison Rd. Burton, MI 48509

For: Used Vehicle Sales

Mr. Burge would like to see some kind of restrictions on the number of used car businesses in Burton; they are coming up all over the city.

Mrs. Abbey said the City Council would approve that through an ordinance.

3. SPR #16-42

By: Hani Poorsaber
6220 Wilderness Pte.
Grand Blanc, MI 48439

Re: 5516 Atherton Rd. Burton, MI 48519

For: Balloon Shop

4. SPR #16-44

By: Ken Lewaar
1409 10th St.
Bay City, MI 48708

Re: 1245 S. Center Rd. Burton, MI 48509

For: Spirit Halloween Store

## G. AUDIENCE PARTICIPATION

Rick Sadler of Burton spoke regarding the safety hazards of Atherton and Lippincott area. He suggested lower speed limits in that area for the safety of walkers and bikers.

Mrs. Ellenburg would like a copy of what Mr. Sadler is requesting.

Mr. Sadler will give a copy to Ms. Boggs after the meeting.

Mr. Johns stated there are grant funds available for bike lanes and Burton would be a good candidate for these funds. He will check into it.

Mrs. Ellenburg stated she almost hit someone the other day that was biking down that area. She encouraged Mr. Sadler to attend more meetings.

Mr. Benthall stated the speed limits are looked at in some detail before being set by the state.

Mr. Johns stated the Genesee County Metropolitan Alliance is requesting non-motorized projects for 2017-2020. There is about $432,000 available for Transportation Alternative Programs (TAP) for the year 2020. He will share this information with Deb Walton, Planning Chair.

## H. PRESENTATION

Mr. Piggot went over the master plan schedule. He is proposing to move the master plan open house to January to maximize attendance and public input due to the Holidays.

The board is in agreement with having the open house in January.

Mr. Piggot asked if everyone was comfortable with the information presented by Sharon Woods from Land Use, USA. He has digital and paper copies available if anyone is interested.

Board discussion about contacting Superintendent's of Burton schools to schedule the youth charettes.

Mr. Piggot stated the visioning session is scheduled for September 29th, Scott and Caitlyn are working on scheduling the open house and there is a stakeholder meeting tentatively

scheduled with the Veteran's group at the VFW on October 15th. The Rotary luncheon is this Thursday at Brookwood Golf Course at noon.

Caitylyn discussed stakeholder and focus group discussion results including creating a walkable community, bike trails, a unified identity of Burton, a community gathering place such as a park or amphitheater, combining the school districts, blight, homeowner assistance, and road improvement.

Mr. Piggot summarized the city's utilities, transportation, sanitary sewer and street and highway network, Transportation Improvement Plan (TIP) projects for 2016-2020, mass transportation, bus stops, MTA strategic plan and railroads.

Board discussion regarding the master plan Facebook page results, cost of boosting posts and the impact of boosts. The board agreed to boost events on the page for $7.00.

Board discussed receiving a hard copy of the online survey for those people who do not use Facebook.

Mrs. Abbey volunteered to input the surveys for these individuals.

Board discussion on the details of visioning session scheduled for September 29th.

Mr. Piggot suggested picking an additional date for a meeting in October as we will be covering a large amount of information regarding the master plan.

The board discussed potential dates and agreed to Monday, October 24, 2016 at 5:00 PM.

1. Progress Report on Master Plan

   Presentation on the progress of the Master Plan by ROWE Professional Services Company

## I. BOARD DISCUSSION

Mr. Burge thanked the members of the audience for their input tonight and encouraged them to come back at future meetings.

Mrs. Abbey reminded Mr. Johnson and Mr. Johns that their terms expire at the end of September. They will need to send a letter of interest to the Mayor's office.

Mrs. Walton stated Mr. Johns and Mr. Benthall are both in need of Planning Commission identification cards.

Ms. Boggs will coordinate the ID cards if Mr. Johns and Mr. Benthall would like to meet after the meeting tonight.

The next regularly scheduled meeting will be held on Tuesday, October 11, 2016 at 5:00 p.m.

Meeting was adjourned at 6:10 PM.

# CITY OF BURTON

## BURTON PLANNING COMMISSION MEETING

## AUGUST 9, 2016

## MINUTES

**Council Chambers** | **Regular Meeting** | **5:00 PM**

**4303 S. CENTER ROAD**
**BURTON, MI 48519**

**This meeting was opened by Chairman Deb Walton at 5:00 PM.**

### A. PLEDGE OF ALLEGIANCE

### B. ROLL CALL

| Attendee Name | Title | Status | Arrived |
|---|---|---|---|
| Ellen Ellenburg | Councilwoman | Present | |
| Kevin Burge | Vice Chairman | Excused | |
| Mary Ann White | Commissioner | Present | |
| Robert Johnson | Commissioner | Present | |
| Tom Gorang | Commissioner | Excused | |
| Deb Walton | Chairman | Present | |
| John Benthall | Commissioner | Present | |
| Kris Johns | Commissioner | Late | 5:03 PM |

### C. STAFF PRESENT

Amber Abbey, Planning/Zoning

Racheal Boggs, Clerk's Office

### D. APPROVAL OF MINUTES

1. Planning Commission - Regular Meeting - Jul 12, 2016 5:00 PM

| | |
|---|---|
| **RESULT:** | **ACCEPTED [UNANIMOUS]** |
| **MOVER:** | John Benthall, Commissioner |
| **SECONDER:** | Robert Johnson, Commissioner |
| **AYES:** | Ellenburg, White, Johnson, Walton, Benthall, Johns |
| **EXCUSED:** | Burge, Gorang |

### E. SITE PLAN REVIEW

Kurt Neiswender ststed he is the Architect for this project at Good Shepard Lutheran Church. He is asking for approval of the site plan for the addition without the additional sidewalks.

Mrs. Abbey stated he did receive a variance from the Zoning board to delay the sidewalks until adjoining property owners are required to put them in. The administration recommends approval.

Mrs. Ellenburg stated she has brought this up to City Council to have a bike path as a cost effective alternative for future situations like this.

Mrs. Walton stated Mr. Burge is absent tonight but he wanted the board to know that it is his opinion that we should stay consistent with the ordinance and require sidewalks. Also, I feel the sidewalks are important in our community and it is part of our master plan and our vision. We want to see the church have the addition. It was solely the sidewalk that was an issue.

Mr. Johns asked for clarification regarding the bike path; would it be an expansion of the road? In this instance, a sidewalk would be odd looking and it would have to be so far deep into the property because of the drainage and ditch there.

1. SPR #16-39

By: Kurt Meiswender / Good Shepard Lutheran Church
5496 Lippincott Blvd.
Burton, MI 48519

Re: 5496 Lippincott Burton, MI 48509
59-23-200-031

For: Addition to Building

| | |
|---|---|
| **RESULT:** | **CARRIED [UNANIMOUS]** |
| **MOVER:** | Robert Johnson, Commissioner |
| **SECONDER:** | Mary Ann White, Commissioner |
| **AYES:** | Ellenburg, White, Johnson, Walton, Benthall, Johns |
| **EXCUSED:** | Burge, Gorang |

## F. AUDIENCE PARTICIPATION

None.

## G. BOARD DISCUSSION

Mrs. Abbey stated she gave the board a packet for the Special Meeting on August 23, 2016 at 5:00 PM in the City Hall Community Room. Please keep and review your packets from Rowe for the next meeting. Also, I need to know if you would like me to not let applicants come before you until they have gone for their variance.

Board discussion regarding applicants receiving variances before or after they come to the Planning Commission.

Mrs. Walton stated she had a meeting with Mrs. Ellenburg, Mr. Burge and the Mayor and one item that came up was having a meeting with the Planning and Zoning Boards for the purpose of master plan discussion.

Ms. White thinks this is a good idea.

The next regularly scheduled meeting will be held on Tuesday, September 13, 2016 at 5:00 p.m.

Minutes Acceptance: Minutes of Aug 9, 2016 5:00 PM (Approval of Minutes)

Meeting was adjourned at 5:15 PM.

Minutes Acceptance: Minutes of Aug 9, 2016 5:00 PM (Approval of Minutes)

# SPR #16-43

By: Kirby Steel, Inc.
4072 Flint Asphalt Dr.
Burton, MI 48529

Re: 4072 Flint Asphalt Dr. Burton, MI 48529
59-33-100-011, M-2 Zoned

For: 64' x 64' Office Addition and 75' x 180' Shop Addition

**ATTACHMENTS:**

- 16-43 (PDF)

| | |
|---|---|
| **RESULT:** | **CARRIED [UNANIMOUS]** |
| **MOVER:** | Kevin Burge, Vice Chairman |
| **SECONDER:** | Tom Gorang, Commissioner |
| **AYES:** | Johnson, Benthall, Walton, Gorang, Burge, White, Johns, Ellenburg |

# City of Burton

Department of Public Works
4093 Manor Drive
Genesee County, Burton, Michigan 48519
(810) 742-9230

## APPLICATION FOR SITE PLAN REVIEW

DATE FILED: 8-22-16
FEE: $200.00
RECEIPT NO: _____
CHECK NO: 43869

SPR #: 16-43

**PLEASE PRINT**

DATE OF PLANNING COMMISSION MEETING: September 13, 2016 TIME: 5:00 pm

APPLICANTS NAME: KIRBY STEEL, INC

APPLICANTS ADDRESS: 4072 FLINT ASPHALT DR.
Burton, MI 48529.

APPLICANTS PHONE NO: 810 743 3360

PROPOSED NAME OF BUSINESS: KIRBY STEEL, INC

SITE ADDRESS: 4072 FLINT ASPHALT DR.

SUBDIVISION & LOT # OR PARCEL NUMBER: _____

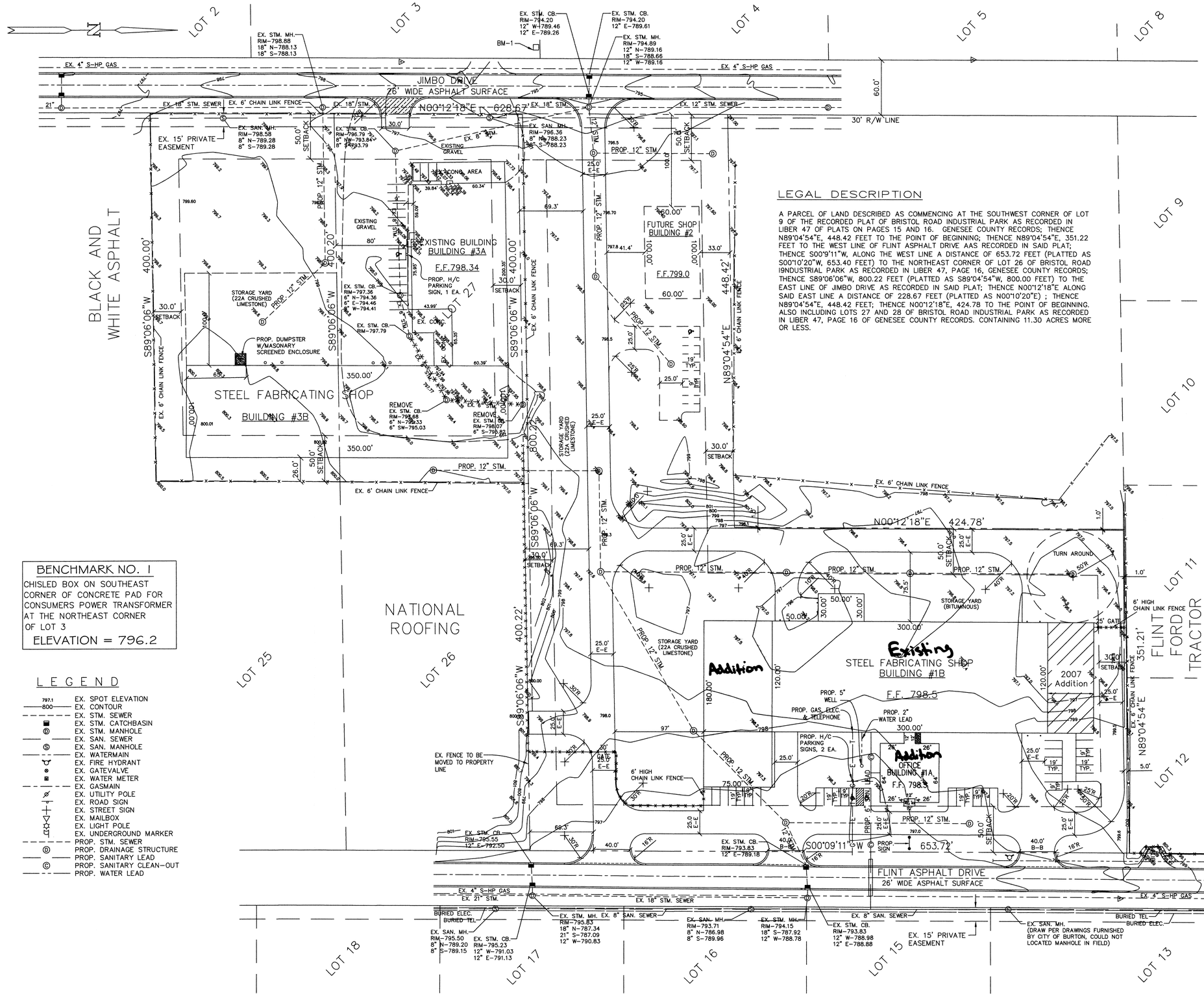
RE: Two Additions

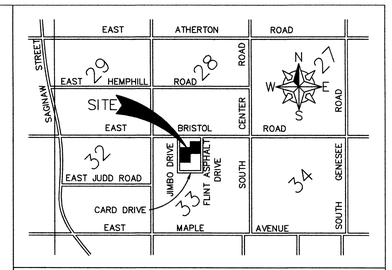
**APPLICANT:** IT IS TO YOUR ADVANTAGE TO ATTEND THE ABOVE SCHEDULED MEETING. THE PLANNING COMMISSION MAY HAVE QUESTIONS THAT DIRECTLY AFFECT APPROVAL, DENIAL, OR POSTPONING UNTIL THESE QUESTIONS CAN BE ANSWERED.

APPLICANTS SIGNATURE: _____

NOTE: All site plans must be filed at least two (2) weeks prior to the Planning Commission hearing and **MUST** comply with the procedures set forth in Section 157.092 of Codified Ordinance as attached. Must include **twelve (12) sets** of prints in order to process the application.

Attachment: 16-43 (2671 : SPR #16-43)




LOCATION MAP

## LEGAL DESCRIPTION

A PARCEL OF LAND DESCRIBED AS COMMENCING AT THE SOUTHWEST CORNER OF LOT 9 OF THE RECORDED PLAT OF BRISTOL ROAD INDUSTRIAL PARK AS RECORDED IN LIBER 47 OF PLATS ON PAGES 15 AND 16. GENESEE COUNTY RECORDS; THENCE N89°04'54"E, 448.42 FEET TO THE POINT OF BEGINNING; THENCE N89°04'54"E, 351.22 FEET TO THE WEST LINE OF FLINT ASPHALT DRIVE AAS RECORDED IN SAID PLAT; THENCE S00°9'11"W, ALONG THE WEST LINE A DISTANCE OF 653.72 FEET (PLATTED AS S00°10'20"W, 653.40 FEET) TO THE NORTHEAST CORNER OF LOT 26 OF BRISTOL ROAD I9NDUSTRIAL PARK AS RECORDED IN LIBER 47, PAGE 16, GENESEE COUNTY RECORDS; THENCE S89°06'06"W, 800.22 FEET (PLATTED AS S89°04'54"W, 800.00 FEET) TO THE EAST LINE OF JIMBO DRIVE AS RECORDED IN SAID PLAT; THENCE N00°12'18"E ALONG SAID EAST LINE A DISTANCE OF 228.67 FEET (PLATTED AS N00°10'20"E) ; THENCE N89°04'54"E, 448.42 FEET; THENCE N00°12'18"E, 424.78 TO THE POINT OF BEGINNING. ALSO INCLUDING LOTS 27 AND 28 OF BRISTOL ROAD INDUSTRIAL PARK AS RECORDED IN LIBER 47, PAGE 16 OF GENESEE COUNTY RECORDS. CONTAINING 11.30 ACRES MORE OR LESS.

## UTILITIES PLAN DISTRUBUTION LIST

| UTILITIES & MUNICIPALITIES | TYPE | TELEPHONE |
|---|---|---|
| CONSUMER ENERGY<br>DIVISION OF GAS AND ELECTRIC<br>3201 EAST COURT STREET<br>FLINT, MICHIGAN 48501 | GAS AND ELECTRIC | (800) 477-5050 |
| AMERITECH<br>502 BEACH STREET<br>FLINT, MICHIGAN 48503 | TELEPHONE | (810) 768-0150 |
| COMCAST CABLEVISION<br>3008 AIRPARK DRIVE SOUTH<br>FLINT, MICHIGAN 48507 | CABLE TV | (810) 235-6112 |
| CITY OF BURTON-D.P.W.<br>4093 MANOR DRIVE<br>BURTON, MICHIGAN, 48519 | STORM SEWERS, SANITARY SEWERS, WATERMAINS & ROADS | (810) 742-9230 |

## SHEET INDEX


CIVIL SITE PLAN & COVER SHEET — C-1

GRADING, PAVING, DRAINAGE & SOIL EROSION CONTROL PLAN — C-2

SANITARY SEWER & WATER SERVICE LEAD PLAN — C-3

LANDSCAPING & SITE LIGHTING PLAN — C-4

CONSTRUCTION NOTES & STANDARD DETAILS — C-5 & C-6

SOIL EROSION & SEDIMENTATION CONTROL MEASURES — C-7


**BENCHMARK NO. 1**

CHISLED BOX ON SOUTHEAST CORNER OF CONCRETE PAD FOR CONSUMERS POWER TRANSFORMER AT THE NORTHEAST CORNER OF LOT 3

ELEVATION = 796.2

## LEGEND

- 797.1 EX. SPOT ELEVATION
- 800 EX. CONTOUR
- EX. STM. SEWER
- EX. STM. CATCHBASIN
- EX. STM. MANHOLE
- EX. SAN. SEWER
- EX. SAN. MANHOLE
- EX. WATERMAIN
- EX. FIRE HYDRANT
- EX. GATEVALVE
- EX. WATER METER
- EX. GASMAIN
- EX. UTILITY POLE
- EX. ROAD SIGN
- EX. STREET SIGN
- EX. MAILBOX
- EX. LIGHT POLE
- EX. UNDERGROUND MARKER
- PROP. STM. SEWER
- PROP. DRAINAGE STRUCTURE
- PROP. SANITARY LEAD
- PROP. SANITARY CLEAN-OUT
- PROP. WATER LEAD

| | | | |
|---|---|---|---|
| DRN. BY: | BESLAC | 6-25-99 | REVISIONS: 1-25-00 WATERLEAD |
| DSGN. BY: | S.MIKHAIL | " | |
| CHKD. BY: | M.R.P. | " | |
| APPR. BY: | R.H.K. | " | |

RJI ARCHITECTS, INC.
RONALD J. ISAACSON, A.I.A.
5084 EXCHANGE DR. – FLINT, MI 48507 – (810) 230-2722

RICHARD H. KRAFT ENGINEERING INC.
409 W. SEVENTH STREET FLINT, MICHIGAN 48503
PHONE: (810) 234-2694 234-2694 FAX. 234-2696

DEVELOPER: KIRBY STEEL INC.
4073 Flint Ashpalt Dr.
BURTON, MICHIGAN 48529
PHONE: (810) 743-3360

CIVIL SITE PLAN & COVER SHEET

SCALE: 1" = 50'

DRN. NO.: C-1

# SPR #16-45

By: Creekwood Architecture, Inc.
1111 Creekwood Trl.
Burton, MI 48509

Re: 3495 S. Center Rd. Burton, MI 48519
59-27-651-002, 59-27-651-001
C-2 General Business Zoned

For: Addition to the Building

**ATTACHMENTS:**

- 16-45 (PDF)

| | |
|---|---|
| **RESULT:** | **CARRIED [UNANIMOUS]** |
| **MOVER:** | Kevin Burge, Vice Chairman |
| **SECONDER:** | Ellen Ellenburg, Councilwoman |
| **AYES:** | Johnson, Benthall, Walton, Gorang, Burge, White, Johns, Ellenburg |

# City of Burton

Department of Public Works
4093 Manor Drive
Genesee County, Burton, Michigan 48519
(810) 742-9230

## APPLICATION FOR SITE PLAN REVIEW

DATE FILED: 8-30-16
FEE: $200.00
RECEIPT NO:
CHECK NO: 15769

SPR #: 16-45

**PLEASE PRINT**

DATE OF PLANNING COMMISSION MEETING: 9-13-16 @ 5:00 pm

APPLICANTS NAME: CREEKWOOD ARCHITECTURE INC

APPLICANTS ADDRESS: 1111 CREEKWOOD TR, BURTON MI 48509

APPLICANTS PHONE NO: (810) 742-0480

PROPOSED NAME OF BUSINESS: IGP REALITY GROUP - GENESYS PHO

SITE ADDRESS: 3495 S. CENTER RD

SUBDIVISION & LOT # OR PARCEL NUMBER: LOTS 203 OF SCHRAM ACRES, # 59-30-156-301

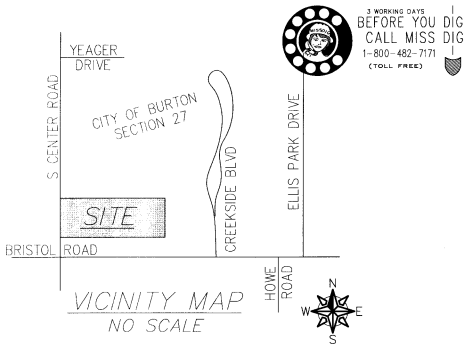
RE: Addition to Building

**APPLICANT:** IT IS TO YOUR ADVANTAGE TO ATTEND THE ABOVE SCHEDULED MEETING. THE PLANNING COMMISSION MAY HAVE QUESTIONS THAT DIRECTLY AFFECT APPROVAL, DENIAL, OR POSTPONING UNTIL THESE QUESTIONS CAN BE ANSWERED.

APPLICANTS SIGNATURE:

NOTE: All site plans must be filed at least two (2) weeks prior to the Planning Commission hearing and **MUST** comply with the procedures set forth in Section 157.092 of Codified Ordinance as attached. Must include **twelve (12) sets** of prints in order to process the application.

Attachment: 16-45 (2675 : SPR #16-45)




VICINITY MAP
NO SCALE

PROPERTY DESCRIPTION
LOTS 2 AND 3 OF SCHRAM ACRES, A RECORDED PLAT, LIBER 13, PAGE 44, GENESEE COUNTY RECORDS, LOCATED IN SECTION 27, T7N-R7E, CITY OF BURTON, GENESEE COUNTY, MI

# NEW ADDITION for:
# IGP REALTY COMPANY LLC

## LEASING TENANTS:
## GENESYS PHO

## 3495 S. CENTER RD
## BURTON, Michigan 48529


### ARCHITECT:

CREEKWOOD ARCHITECTURE, INC.
1111 CREEKWOOD TRAIL
BURTON, MI. 48509
TELEPHONE (810) 742-0480
FAX (810) 742-8393

### DEVELOPER:

GENESYS INTEGRATED PRACTICE PC
307 E. COURT STREET
FLINT, MI. 48503
TELEPHONE (810) 424-2021


## LIST OF DRAWINGS


COVER SHEET

**SITE**

S1 COMPOSITE SITE PLAN
S2 ENLARGED SITE PLAN
S3 SITE GRADING PLAN
S4 SITE STORM DRAINAGE PLAN
S5 STORM CALCULATIONS
S6 SITE LIGHTING PLAN
S7 SOIL EROSION CONTROL PLAN
S8 SOIL EROSION CONTROL LEGEND & NOTES
S9 SITE DETAILS

**ARCHITECTURAL**

A2 COMPOSITE FLOOR PLAN
A3 LOWER LEVEL FLOOR PLAN
A4 UPPER LEVEL FLOOR PLAN
A5 EXTERIOR ELEVATIONS

**MECHANICAL**

**PLUMBING**

**ELECTRICAL**


10 STANDARD NOTES FOR PRELIMINARY PLATS AND SITE PLANS

1. EXTENSION OF PUBLIC UTILITIES: All public sanitary sewer and/or water main SHALL be extended to the furthest limits of the property, including corner lots, with the pipe size and material approved by GCDC-WWS. This is necessary for plan approval. For water service of 1" or less or a building on a corner lot, the requirements to extend the public water main and/or sanitary sewer along both property lines will be reviewed. Final determination shall be made by GCDC-WWS.
2. WATER MAIN LOOPING: All public watermains shall be looped whenever possible. The pipe sizing shall be approved by GCDC-WWS.
3. INDUSTRIAL PRETREATMENT PROGRAM(IPP): This permit is for all commercial and Industrial discharges. The OWNER shall obtain an Industrial Pretreatment Discharge Permit prior to the issuance of a Sewer Connection Permit. Industrial Discharge Permits are non-transferable. Changes in facility use will require a new Industrial Discharge Permit.
4. SOIL EROSION: The DEVELOPER shall submit a detailed Soil Erosion and Sedimentation Control plan and obtain an Act 451 part 91, Soil Erosion and Sedimentation Control permit. This includes the payment of fees and the providing of necessary bonds. No earth changes or excavation shall be started prior to the issuance of this permit. The DEVELOPER shall protect all existing and proposed storm sewer facilities on and adjacent to the site during excavation and construction. All sediment shall be contained on site. Any silt in county drains, storm sewer, culverts, etc. as a result of this project, shall be removed by the DEVELOPER at the cost of the DEVELOPER.
5. FLOOD PLAIN OR WETLAND CONSTRUCTION: The DEVELOPER shall apply to the Michigan Department of Environmental Quality for a permit for the alteration and/or occupation of a flood plain or flood way, as required under PA 451. Evidence of this permit may be required prior to plan approval by GCDC-WWS.
6. NPDES STORM WATER DISCHARGE PERMIT: The owner of the property shall obtain a NPDES Storm Water Discharge permit for construction activities from MDEQ as required under Public Act 451. The notice of coverage form shall be submitted through GCDC-WWS with the Soil Erosion Control permit application. All MDEQ fees shall accompany the Notice of Coverage. Evidence of this permit may be required prior to plan approval by GCDC-WWS.
7. GENESEE COUNTY PERMIT TO CONSTRUCT A PUBLIC UTILITY: After the approval of this preliminary plat or site plan, the DEVELOPER shall submit a detailed plan for construction of all public sanitary sewer and watermain. The plans must have GCDC-WWS approval, an S-permit issued, and approval from the MDEQ prior to beginning construction.
8. GENESEE COUNTY ROAD COMMISSION PERMIT: The DEVELOPER shall obtain a permit from the Genesee County Road Commission to perform work within the Genesee County Road Commission Right-of-Way. All fees for the permit, bonds and insurances are the responsibility of the developer.
9. MUNICIPALITY SANITARY SEWER AND WATER PERMIT: Prior to the issuance of a building permit by the local municipality, the developer shall be required to obtain a sanitary sewer and/or water tap-in permit from the local municipality, if authorized, or GCDC-WWS.
10. STATE CONSTRUCTION PERMITS: The sanitary sewer and water main construction permit application from the Michigan Department of Environmental Quality (MDEQ) shall be submitted to the MDEQ after receiving approval from GCDC-WWS. Construction shall not begin until these state permits are issued.

### UTILITY NOTE

UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF FACILITIES ONLY, AS DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANY'S RECORDS. NO GUARANTEE IS EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.

PRIOR TO CONSTRUCTION, ALL LOCATION AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN FIELD. DURING CONSTRUCTION, CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR OVERHEAD AND/OR BURIED UTILITIES.

### PUBLIC UTILITY STATEMENT

*ALL SANITARY SEWER'S 8" AND LARGER IN DIAMETER AND ALL WATER MAINS 6" AND LARGER IN DIAMETER FOR THIS PROJECT ARE DESIGNED FOR AND WILL BECOME A PUBLIC SYSTEM UPON SATISFACTORY APPROVAL BY THE AGENCY OR MUNICIPALITY.*

### EASEMENT STATEMENT

*ALL PUBLIC SANITARY SEWER AND PUBLIC WATER MAINS SHALL HAVE AN EASEMENT GRANTED TO THE AGENCY OR MUNICIPALITY FOR MAINTENANCE, REPAIR, AND/OR REPLACEMENT. FOR CONDOMINIUMS, THE EASEMENT SHALL BE RECORDED ON THE MASTER DEED DOCUMENT AND FOR A SUBDIVISION, THE EASEMENT SHALL BE NOTED ON THE FINAL RECORD PLAT. ALL OTHERS SHALL BE RECORDED ON STANDARD GCDC EASEMENT DOCUMENTS.*

### N.P.D.E.S. STATEMENT

*THERE WILL BE LESS THAN 5.0 ACRES DISTURBED, THEREFORE AN N.P.D.E.S. PERMIT IS NOT REQUIRED.*

### CONTRACTOR ALERT STATEMENT

*THIS PROJECT HAS BEEN DESIGNED USING THE LATEST G.C.D.C. CRITERIA. REVIEW THE NOTES, DETAILS, AND DESIGN CAREFULLY PRIOR TO SUBMITTING A BID. FULL COMPLIANCE WITH THE NEW STANDARDS WILL BE REQUIRED.*

### BENCHMARK:

*BM#1*
*CORNER OF CONC. SLAB*
*ELEVATION = 778.10 - U.S.G.S.*

*BM#1*
*SPIKE IN POWER POLE*
*ELEVATION = 777.63 - U.S.G.S.*

**PLAN SUBMISSION LIST**

GENESEE COUNTY DRAIN COMMISSIONER-STORM DRAIN DIVISION — SUSANNE KUBIC-G-4608 BEECHER ROAD, FLINT, MICHIGAN 48532
GENESEE COUNTY DRAIN COMMISSIONER-DIVISION OF WATER AND WASTE SERVICES — NEIL MARTZ, P.E.-G-4610 BEECHER ROAD, FLINT, MICHIGAN 48532
CITY OF BURTON BUILDING DEPARTMENT — 4093 MANOR DR, BURTON, MICHIGAN 48519
STATE OF MICHIGAN
CONSUMER ENERGY — DAVID MCDANIEL-3201 E. COURT ST. FLINT, MICHIGAN 48501
AMERITECH — PHILLIP BRAGGEY-502 BEECH ST. ROOM 402 FLINT, MICHIGAN 48502

**NOTE:**
**THIS PROJECT HAS BEEN DESIGNED IMPLEMENTING THE LATEST GCDC-WWS DESIGN SPECIFICATIONS. CAREFULLY REVIEW THE NOTES, DETAILS AND DESIGN PRIOR TO SUBMITTING A BID. FULL COMPLIANCE WITH THE NEW STANDARDS WILL BE REQUIRED.**

STATE OF MICHIGAN
JEFFREY J. VAN CAMP
ARCHITECT
No. 47808
LICENSED ARCHITECT

## BUILDING INFORMATION:

**BUILDING DATA:**

| | | |
|---|---|---|
| USE GROUP- | B (BUSINESS) | |
| CONSTRUCTION TYPE- | 5B (UNPROTECTED) | |
| | FULLY SUPPRESSED | |
| GROSS BUILDING AREA- | EXISTING BUILDING - | 21,505 SF |
| | NEW ADDITION - | 5,304 SF |
| | TOTAL AREA - | 26,809 SF |
| BUILDING HEIGHT- | 26'-7" | |
| OCCUPANT LOAD- | 268 PEOPLE PER MBC | |

**BUILDING CODE:**

| | |
|---|---|
| BUILDING CODE - | 2012 MICHIGAN INTERNATIONAL BLDG. CODE |
| MECHANICAL CODE - | 2012 MICHIGAN MECHANICAL CODE |
| ELECTRICAL CODE - | 2011 NATIONAL ELECTRIC CODE |
| PLUMBING CODE - | 2012 MICHIGAN PLUMBING CODE |

**DESIGN LOADS:**

| | |
|---|---|
| LIVE/SNOW LOAD - | 30 PSF |
| ATTIC LIVE LOAD - | 125 PSF |
| DEAD LOAD - | 20 PSF |
| WIND LOAD - | 23 PSF |
| SOIL BEARING CAPACITY - | 2,500 PSF |

**AREA CALCULATIONS**

**AREA MODIFICATIONS** 29-Aug-16

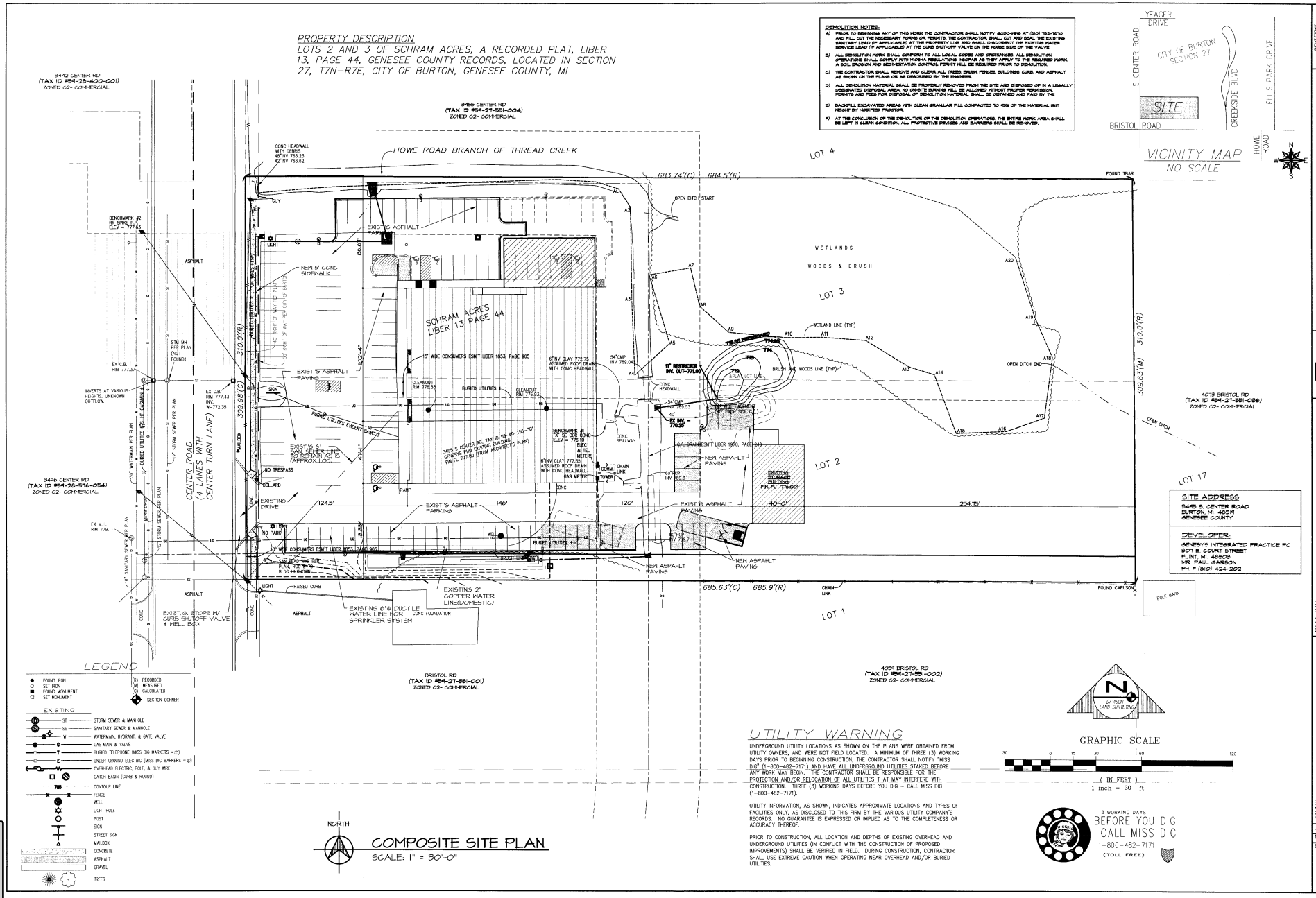
**Area #1: Genesys Center Rd**

| | | | |
|---|---|---|---|
| Building Perimeter with 20' min. Open Space | F = | 516 | |
| Perimeter of Entire Building | P = | 688 | |
| Minimum Width of Public Way or Open Space | W = | 30 | |
| Actual Floor Area | | 24271 | |
| Tabular Area per Table 503 | At = | 9500 | |
| Area Increase due to Frontage | If = | 50.00 | 100*(F/P- 25)*W/30 |
| Area Increase due to Sprinkler | Is = | 300 | |
| Allowable Area per Floor | Aa = | 42750.00 | At+(Ati#100)+(Atis/10( |

## PLAN DISTRIBUTION LIST & DATES:

CITY OF BURTON FOR SITE PLAN REVIEW - 29 AUGUST 2016

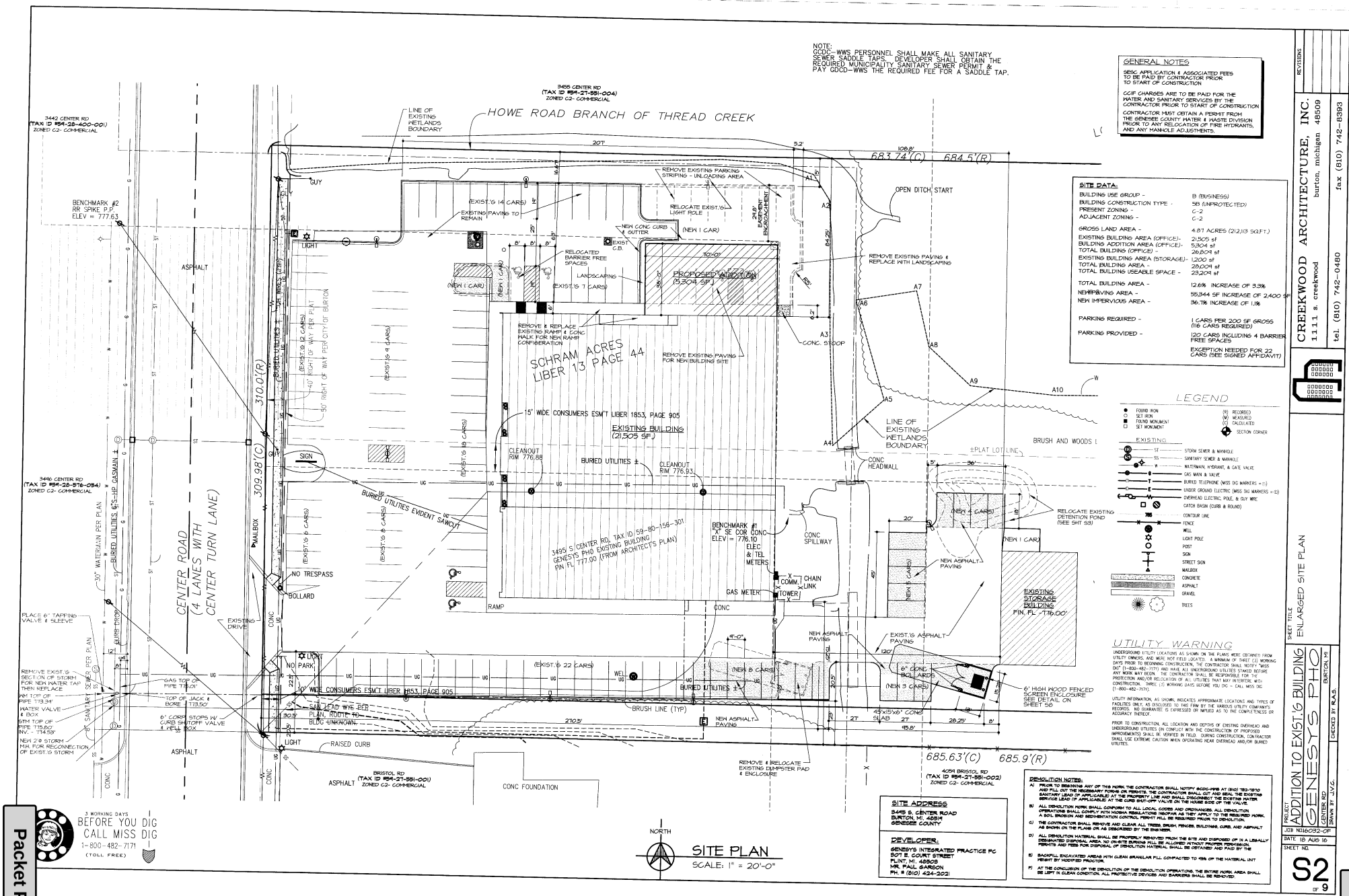
## ARCHITECTS JOB # 16032-OF

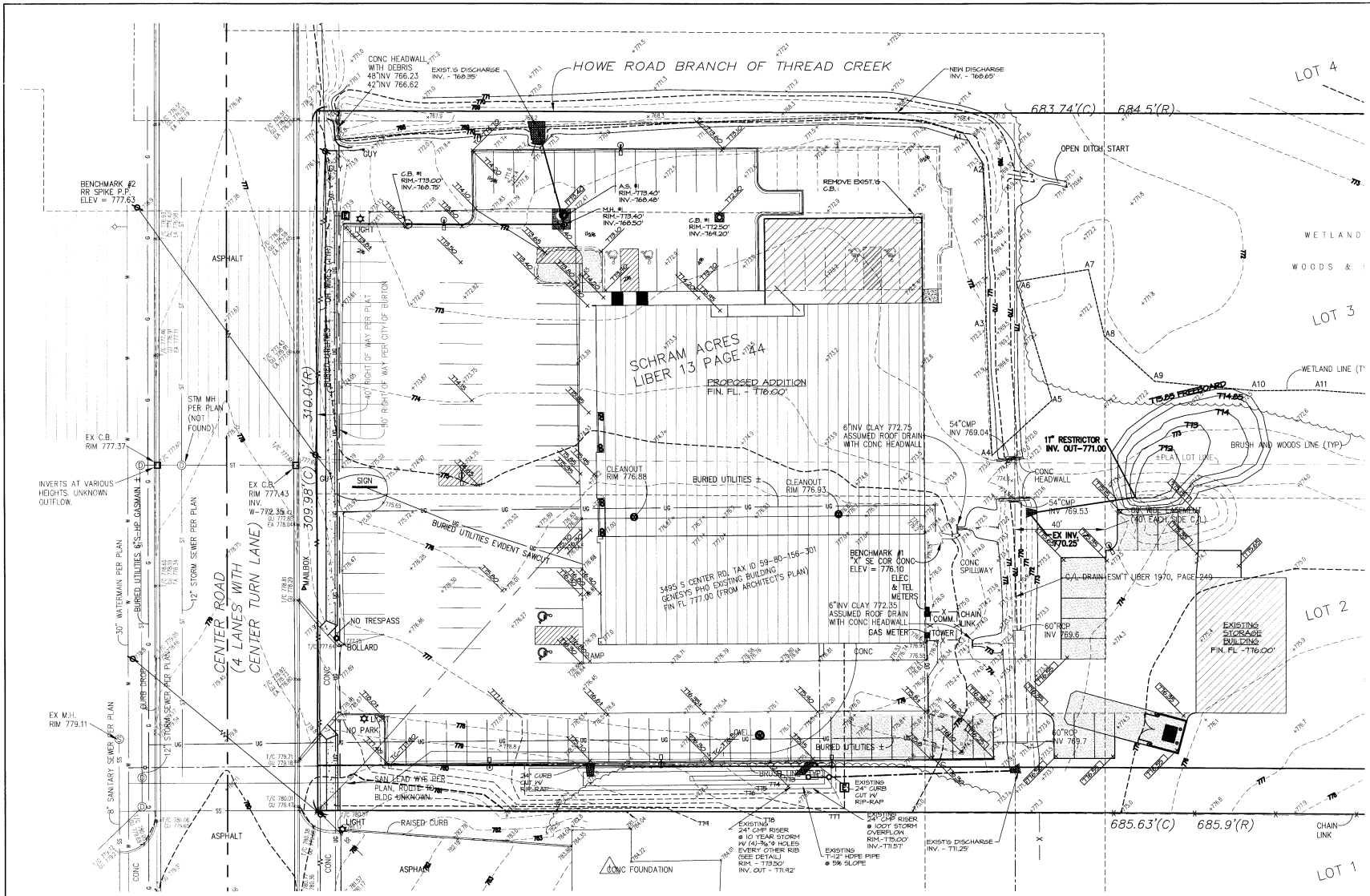



Packet Pg. 16

E.2.a

Attachment: 16-45 (2675 : SPR #16-45)


NOTE:
GCDC-WWS PERSONNEL SHALL MAKE ALL SANITARY SEWER SADDLE TAPS. DEVELOPER SHALL OBTAIN THE REQUIRED MUNICIPALITY SANITARY SEWER PERMIT & PAY GCDC-WWS THE REQUIRED FEE FOR A SADDLE TAP.
GENERAL NOTES
SESC APPLICATION & ASSOCIATED FEES TO BE PAID BY CONTRACTOR PRIOR TO START OF CONSTRUCTION
GCIF CHARGES ARE TO BE PAID FOR THE WATER AND SANITARY SERVICES BY THE CONTRACTOR PRIOR TO START OF CONSTRUCTION
CONTRACTOR MUST OBTAIN A PERMIT FROM THE GENESEE COUNTY WATER & WASTE DIVISION PRIOR TO ANY RELOCATION OF FIRE HYDRANTS, AND ANY MANHOLE ADJUSTMENTS.
SITE DATA:
BUILDING USE GROUP - B (BUSINESS)
BUILDING CONSTRUCTION TYPE - 5B (UNPROTECTED)
PRESENT ZONING - C-2
ADJACENT ZONING - C-2
GROSS LAND AREA - 4.87 ACRES (212,113 SQ.FT.)
EXISTING BUILDING AREA (OFFICE)- 21,505 sf
BUILDING ADDITION AREA (OFFICE)- 5,304 sf
TOTAL BUILDING (OFFICE) - 26,809 sf
EXISTING BUILDING AREA (STORAGE)- 1,200 sf
TOTAL BUILDING AREA - 28,009 sf
TOTAL BUILDING USEABLE SPACE - 23,209 sf
TOTAL BUILDING AREA - 12.6% INCREASE OF 3.3%
NEW PAVING AREA - 55,344 SF INCREASE OF 2,400 SF
NEW IMPERVIOUS AREA - 56.7% INCREASE OF 1.1%
PARKING REQUIRED - 1 CARS PER 200 SF GROSS (116 CARS REQUIRED)
PARKING PROVIDED - 120 CARS INCLUDING 4 BARRIER FREE SPACES
EXCEPTION NEEDED FOR 22 CARS (SEE SIGNED AFFIDAVIT)
LEGEND
FOUND IRON
SET IRON
FOUND MONUMENT
SET MONUMENT
(R) RECORDED
(M) MEASURED
(C) CALCULATED
SECTION CORNER
EXISTING
STORM SEWER & MANHOLE
SANITARY SEWER & MANHOLE
WATERMAIN, HYDRANT, & GATE VALVE
GAS MAIN & VALVE
BURIED TELEPHONE (MISS DIG MARKERS = ⊙)
UNDER GROUND ELECTRIC (MISS DIG MARKERS = ⊙)
OVERHEAD ELECTRIC, POLE, & GUY WIRE
CATCH BASIN (CURB & ROUND)
CONTOUR LINE
FENCE
WELL
LIGHT POLE
POST
SIGN
STREET SIGN
MAILBOX
CONCRETE
ASPHALT
GRAVEL
TREES
UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLANS WERE OBTAINED FROM UTILITY OWNERS, AND WERE NOT FIELD LOCATED. A MINIMUM OF THREE (3) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY "MISS DIG" (1-800-482-7171) AND HAVE ALL UNDERGROUND UTILITIES STAKED BEFORE ANY WORK MAY BEGIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION. THREE (3) WORKING DAYS BEFORE YOU DIG - CALL MISS DIG (1-800-482-7171).
UTILITY INFORMATION, AS SHOWN, INDICATES APPROXIMATE LOCATIONS AND TYPES OF FACILITIES ONLY, AS DISCLOSED TO THIS FIRM BY THE VARIOUS UTILITY COMPANY'S RECORDS. NO GUARANTEE IS EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF.
PRIOR TO CONSTRUCTION, ALL LOCATION AND DEPTHS OF EXISTING OVERHEAD AND UNDERGROUND UTILITIES (IN CONFLICT WITH THE CONSTRUCTION OF PROPOSED IMPROVEMENTS) SHALL BE VERIFIED IN FIELD. DURING CONSTRUCTION, CONTRACTOR SHALL USE EXTREME CAUTION WHEN OPERATING NEAR OVERHEAD AND/OR BURIED UTILITIES.
DEMOLITION NOTES:
A) PRIOR TO BEGINNING ANY OF THIS WORK THE CONTRACTOR SHALL NOTIFY SCDC-WWS AT (810) 732-7810 AND FILL OUT THE NECESSARY FORMS OR PERMITS. THE CONTRACTOR SHALL CUT AND SEAL THE EXISTING SANITARY LEAD (IF APPLICABLE) AT THE PROPERTY LINE AND SHALL DISCONNECT THE EXISTING WATER SERVICE LEAD (IF APPLICABLE) AT THE CURB SHUT-OFF VALVE ON THE HOUSE SIDE OF THE VALVE.
B) ALL DEMOLITION WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES. ALL DEMOLITION OPERATIONS SHALL COMPLY WITH MDEQ REGULATIONS INCLUDING AS THEY APPLY TO THE REQUIRED WORK. A SOIL EROSION AND SEDIMENTATION CONTROL PERMIT WILL BE REQUIRED PRIOR TO DEMOLITION.
C) THE CONTRACTOR SHALL REMOVE AND CLEAR ALL TREES, BRUSH, FENCES, BUILDINGS, CURB, AND ASPHALT AS SHOWN ON THE PLANS OR AS DESCRIBED BY THE ENGINEER.
D) ALL DEMOLITION MATERIAL SHALL BE PROPERLY REMOVED FROM THE SITE AND DISPOSED OF IN A LEGALLY DESIGNATED DISPOSAL AREA. NO ON-SITE BURNING WILL BE ALLOWED WITHOUT PROPER PERMISSION.
E) BACKFILL EXCAVATED AREAS WITH CLEAN GRANULAR FILL COMPACTED TO 95% OF THE MATERIAL UNIT WEIGHT BY MODIFIED PROCTOR.
F) AT THE CONCLUSION OF THE DEMOLITION OF THE DEMOLITION OPERATIONS, THE ENTIRE WORK AREA SHALL BE LEFT IN CLEAN CONDITION. ALL PROTECTIVE DEVICES AND BARRIERS SHALL BE REMOVED.
SITE ADDRESS
3495 S. CENTER ROAD
BURTON, MI 48519
GENESEE COUNTY
DEVELOPER:
GENESYS INTEGRATED PRACTICE PC
501 E. COURT STREET
FLINT, MI. 48503
MR. PAUL GARSON
PH. # (810) 424-2021
SITE PLAN
SCALE: 1" = 20'-0"
NORTH
3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171
(TOLL FREE)
HOWE ROAD BRANCH OF THREAD CREEK
CENTER ROAD
(4 LANES WITH CENTER TURN LANE)
SCHRAM ACRES
LIBER 13 PAGE 44
PROPOSED ADDITION (5,304 SF)
EXISTING BUILDING (21,505 SF)
15' WIDE CONSUMERS ESM'T LIBER 1853, PAGE 905
3495 S. CENTER RD. TAX ID 59-80-156-301
GENESYS PHO EXISTING BUILDING
FIN. FL. 777.00 (FROM ARCHITECT'S PLAN)
BENCHMARK #1
"X" SE COR CONC
ELEV = 776.10
ELEC & TEL METERS
EXISTING STORAGE BUILDING
FIN. FL. 776.00'
683.74'(C) 684.5'(R)
685.63'(C) 685.9'(R)
309.98'(C)
310.0'(R)
3442 CENTER RD
(TAX ID #54-28-400-001)
ZONED C2- COMMERCIAL
3455 CENTER RD
(TAX ID #54-27-551-004)
ZONED C2- COMMERCIAL
3446 CENTER RD
(TAX ID #54-28-576-054)
ZONED C2- COMMERCIAL
4051 BRISTOL RD
(TAX ID #54-27-551-002)
ZONED C2- COMMERCIAL
BRISTOL RD
(TAX ID #54-27-551-001)
ZONED C2- COMMERCIAL
BENCHMARK #2
RR SPIKE P.P.
ELEV = 777.63
CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393
REVISIONS
SHEET TITLE
ENLARGED SITE PLAN
PROJECT
ADDITION TO EXIST.G BUILDING
GENESYS PHO
CENTER RD. BURTON, MI
JOB NO. 16032-OF
DRAWN BY: J.V.C.
CHECKED BY: R.A.S.
DATE 18 AUG 16
SHEET NO.
S2
OF 9




GRADING PLAN
SCALE: 1" = 20'-0"

REVISIONS

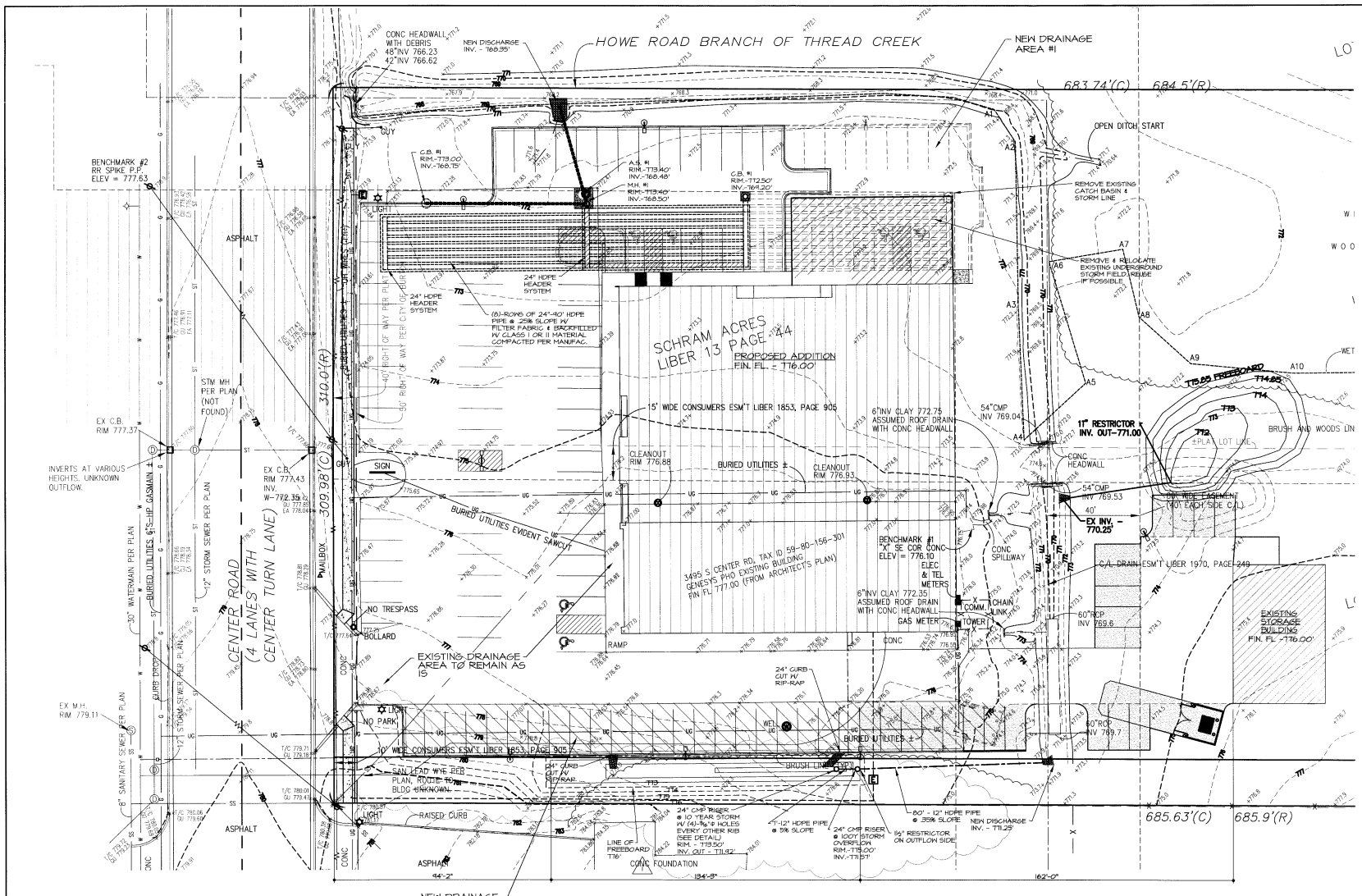
CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393

SHEET TITLE
SITE GRADING PLAN

PROJECT
ADDITION TO EXIST'G BUILDING
GENESYS PHO
CENTER RD BURTON, MI

DRAWN BY J.V.C. CHECKED BY R.A.S.

JOB NO. 16032-OF
DATE 18 AUG 16
SHEET NO. S3




CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393

REVISIONS

SHEET TITLE: STORM SEWER PLAN MISC. DETAILS

PROJECT: ADDITION TO EXIST.G BUILDING GENESYS PHO
CENTER RD. BURTON, MI

JOB NO. 16032-OF
DATE 18 AUG 16
DRAWN BY J.V.G.
CHECKED BY R.A.S.
SHEET NO. S4 OF 9

Packet Pg. 19

E.2.a

Attachment: 16-45 (2675 : SPR #16-45)

Original North Parking Lot

Property Length (L)
Property Width (W)
Coefficient (C) 0.2

Area (A) 0.60 Acres

Q allow 0.12 CFS Qa=C*I*A

PROPOSED RUNOFF
Highwater Design 864.35
Existing Storm Sewer 861.03
Height 3.32
Length of Outlet 29
Diameter of Outlet 0.125 *1.25" Dia. Restrictor*
Slope of Pipe (Sp) 0.200
Pipe Material (n) 0.013 from charts
Pipe Area 0.0123
Pipe Hydraulic Radius 0.031
Q design (manhole) 0.06 CFS Qd=(1.486*(A*(R^.67))/S^1/2

Orifice Flow 0.11

OUTLET TO EXISTING SEWER

| | Sq. Ft. | Factor | Weighted Factor |
|---|---|---|---|
| Grass | 0 | 0.2 | 0 |
| Pavement | 11628 | 0.9 | 10465.2 |
| Building | 14955 | 0.9 | 13099.5 |
| | 26583.0 | | 23.565 |

Weighted Coeff. (Cw) 0.90

DETERMINATION OF DETENTION VOLUME 100 Year

| TC (Min.) | i (In/Hr) | Cw A A in Acre | Q in (CFS) | Q out (CFS) | Qin - Qou (CFS) | Volume (CF) |
|---|---|---|---|---|---|---|
| 10 | 5.77 | 0.54 | 3.12 | 0.12 | 3.00 | 1797 |
| 20 | 4.60 | 0.54 | 2.48 | 0.12 | 2.36 | 2837 |
| 30 | 3.90 | 0.54 | 2.11 | 0.12 | 1.99 | 3575 |
| 40 | 3.40 | 0.54 | 1.84 | 0.12 | 1.72 | 4118 |
| 50 | 3.00 | 0.54 | 1.62 | 0.12 | 1.50 | 4500 |
| 60 | 2.70 | 0.54 | 1.46 | 0.12 | 1.34 | 4817 |
| 70 | 2.50 | 0.54 | 1.35 | 0.12 | 1.23 | 5166 |
| 80 | 2.30 | 0.54 | 1.24 | 0.12 | 1.12 | 5366 |
| 90 | 2.10 | 0.54 | 1.13 | 0.12 | 1.01 | 5476 |
| 100 | 1.90 | 0.54 | 1.03 | 0.12 | 0.91 | 5436 |
| 110 | 1.80 | 0.54 | 0.97 | 0.12 | 0.85 | 5623 |
| 120 | 1.70 | 0.54 | 0.92 | 0.12 | 0.80 | 5746 |
| 130 | 1.60 | 0.54 | 0.86 | 0.12 | 0.74 | 5803 |
| 140 | 1.50 | 0.54 | 0.81 | 0.12 | 0.69 | 5796 |
| 150 | 1.45 | 0.54 | 0.78 | 0.12 | 0.66 | 5967 |
| 160 | 1.4 | 0.54 | 0.76 | 0.12 | 0.64 | 6106 |
| 170 | 1.3 | 0.54 | 0.70 | 0.12 | 0.58 | 5936 |
| 180 | 1.25 | 0.54 | 0.68 | 0.12 | 0.56 | 5994 |
| 190 | 1.2 | 0.54 | 0.65 | 0.12 | 0.53 | 6019 |
| 200 | 1.15 | 0.54 | 0.62 | 0.12 | 0.50 | 6012 |
| 210 | 1.1 | 0.54 | 0.59 | 0.12 | 0.47 | 5972 |
| 220 | 1 | 0.54 | 0.54 | 0.12 | 0.42 | 5544 |
| 230 | 0.95 | 0.54 | 0.51 | 0.12 | 0.39 | 5423 |
| 240 | 0.93 | 0.54 | 0.50 | 0.12 | 0.38 | 5504 |

Min. Volume to be Stored: **6106** CF

Storage Calculations

| | Area | Total Storage |
|---|---|---|
| Underground Storage | | |
| 24" w/ 20% stone void | | 5975 |
| 24" HDPE Pipe 85 LF | 3.142 | 267 |

TOTAL STORM SEWER STOARAGE **6242**

DAWSON LAND SURVEYING, INC.

DET-09039-dwg Site-out.dts
6/22/2009

## EXISTING DRAINAGE CALCULATIONS

STORMWATER RETENTION / DETENTION PIPE SYSTEM SIZING WORKSHEET

THE MOST ADVANCED NAME IN DRAINAGE SYSTEMS
Version 7.0

Project Name:
Location (City, State):
Prepared For:
Date Prepared:
Engineer:
Contractor:
Regional Engineer:
Area Sales Representative:
Surface Application:

Enter all Select values in the Yellow fields ONLY

Unit of Measure: U.S. Imperial (ft, in) / Metric (mm, m)

Joint Type: Plain End ST
Design Storage Volume: 5000 CF
Average Cover Height: 3.00 FT

Header Diameter: 24
Number of Headers: 2
Perforate headers?: Yes
Include Header(s) in Storage Volume?: Yes

| | Lateral Diameter (in) | Lateral Length (ft) | Number of Laterals | # of Sticks / Lateral | Approx. Length of End Stick |
|---|---|---|---|---|---|
| Group 1 | 24 | 87 | 6 | 4 | 8.8 ft. |
| Group 2 | 24 | 86 | 6 | 3 | 7.1 ft. |
| Group 3 | 60 | | | 3 | 5 ft. |

Perforate Laterals? Yes

Stone Porosity? 30 %
(Enter 30 to account for the void in the storage stone.)
Additional stone Layer Allowing Storage (ADV)? 0 ft

| | COMPONENT | | | | SUBSYSTEM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Product Volume (CF) | Stone (CF) | ADV (CF) | Total System (CF) | Width (FT) | Length (FT) | Pipe Diameter (IN) | Width (FT) | Length (FT) | Detached Surface Area (SYD) | Excav. shim* (CYD) | Estimated fill shim* (CYD) | ADV (CYD) |
| Group 1 | 2,985 | 824 | 0 | 2,985 | 30 | 73 | 24 | 32 | 73 | 260 | 412 | 315 | 0 |
| Group 2 | 2,301 | 698 | 0 | 2,999 | 25 | 61 | 24 | 28 | 61 | 213 | 354 | 305 | 0 |
| Group 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTALS | 5,286 | 1,520 | 0 | 5,984.10 | | | | | | 473 | 766 | 620 | 0 |

105.5% of the required storage

NOTES
1 - Flat Stick: Assumed a standard lay length of 18'-0".
2 - Excavation: Based on manufacturer's recommended trench width and bedding depth. Estimated volumes assume a flat system based on the user-entered Average Cover Height.
3 - Shim: Based on standard pipe corrugations - calculated for conservative quantities. Not for use with take-offs or ordering purposes.
4 - Cover Height: For traffic installations, 1-ft of minimum cover is required for diameters 12-36", 2-ft for 42-60". Maximum cover shall not exceed 8-ft without consulting Application Engineering.
5 - Bill of Materials: Does not differentiate between 90 and 45° fittings or between 1-ft and 6-ft profile connections. Determined on a project specific basis.
6 - Calculations determine all Stripps and Lateral Bundles. Please use calculations to determine quantities and costs for different Group diameters.

This Excel spreadsheet represented for rough estimating purposes only. This tool is intended to assist in the sizing of Stripps Stormwater Retention/Detention Pipe System components. As with any calculation tool, the tool should be used for estimating only. The engineer must verify the assumptions and methods to ensure they satisfy the project and local design criteria.

new
Property Length (L)
Property Width (W)
Coefficient (C) 0.2

Area (A) 0.60 Acres

Q allow 0.12 CFS Qa=C*I*A

PROPOSED RUNOFF
Highwater Design 864.35
Existing Storm Sewer 861.03
Height 3.32
Length of Outlet 29
Diameter of Outlet 0.125 *1.25" Dia. Restrictor*
Slope of Pipe (Sp) 0.200
Pipe Material (n) 0.013 from charts
Pipe Area 0.0123
Pipe Hydraulic Radius 0.031
Q design (manhole) 0.06 CFS Qd=(1.486*(A*(R^.67)

Orifice Flow 0.11

OUTLET TO EXISTING SEWER

| | Sq. Ft. | Factor | Weighted Factor |
|---|---|---|---|
| Grass | 5507 | 0.3 | 1652.1 |
| Pavement | 6121 | 0.95 | 5814.95 |
| Buildings/Future | 17215 | 0.95 | 16354.25 |
| | 28843.0 | | 23.821 |

Weighted Coeff. (Cw) 0.83

DETERMINATION OF DETENTION VOLUME 100 Year

| TC (Min.) | i (In/Hr) | Cw A A in Acre | Q in (CFS) | Q out (CFS) | Qin - Qou (CFS) | Volume (CF) |
|---|---|---|---|---|---|---|
| 10 | 5.77 | 0.50 | 2.86 | 0.12 | 2.74 | 1644 |
| 20 | 4.60 | 0.50 | 2.28 | 0.12 | 2.16 | 2591 |
| 30 | 3.90 | 0.50 | 1.93 | 0.12 | 1.81 | 3263 |
| 40 | 3.40 | 0.50 | 1.68 | 0.12 | 1.56 | 3756 |
| 50 | 3.00 | 0.50 | 1.49 | 0.12 | 1.37 | 4100 |
| 60 | 2.70 | 0.50 | 1.34 | 0.12 | 1.22 | 4385 |
| 70 | 2.50 | 0.50 | 1.24 | 0.12 | 1.12 | 4698 |
| 80 | 2.30 | 0.50 | 1.14 | 0.12 | 1.02 | 4895 |
| 90 | 2.10 | 0.50 | 1.04 | 0.12 | 0.92 | 4971 |
| 100 | 1.90 | 0.50 | 0.94 | 0.12 | 0.82 | 4929 |
| 110 | 1.80 | 0.50 | 0.89 | 0.12 | 0.77 | 5095 |
| 120 | 1.70 | 0.50 | 0.84 | 0.12 | 0.72 | 5201 |
| 130 | 1.60 | 0.50 | 0.79 | 0.12 | 0.67 | 5248 |
| 140 | 1.50 | 0.50 | 0.74 | 0.12 | 0.62 | 5236 |
| 150 | 1.45 | 0.50 | 0.72 | 0.12 | 0.60 | 5367 |
| 160 | 1.4 | 0.50 | 0.69 | 0.12 | 0.57 | 5508 |
| 170 | 1.3 | 0.50 | 0.64 | 0.12 | 0.52 | 5347 |
| 180 | 1.25 | 0.50 | 0.62 | 0.12 | 0.50 | 5394 |
| 190 | 1.2 | 0.50 | 0.59 | 0.12 | 0.47 | 5411 |
| 200 | 1.15 | 0.50 | 0.57 | 0.12 | 0.45 | 5398 |
| 210 | 1.1 | 0.50 | 0.55 | 0.12 | 0.43 | 5356 |
| 220 | 1 | 0.50 | 0.50 | 0.12 | 0.38 | 4957 |
| 230 | 0.95 | 0.50 | 0.47 | 0.12 | 0.35 | 4840 |
| 240 | 0.93 | 0.50 | 0.46 | 0.12 | 0.34 | 4905 |

Min. Volume to be Stored: **5508** CF

Underground Detention Field-

24" W 20% STONE VOID 200 lf 5705 cf

**5705 CF**

## NORTH PARKING LOT RECALCULATIONS

new
Property Length (L)
Property Width (W)
Coefficient (C) 0.2

Area (A) 0.50 Acres

Q allow 0.10 CFS Qa=C*I*A

PROPOSED RUNOFF
Highwater Design 774.85
Existing Storm Sewer 771
Height 3.85
Length of Outlet 29
Diameter of Outlet 0.125 *1.25" Dia. Restrictor*
Slope of Pipe (Sp) 0.200
Pipe Material (n) 0.013 from charts
Pipe Area 0.0123
Pipe Hydraulic Radius 0.031
Q design (manhole) 0.06 CFS Qd=(1.486*(A*(R^.67)

Orifice Flow 0.12

OUTLET TO EXISTING SEWER

| | Sq. Ft. | Factor | Weighted Factor |
|---|---|---|---|
| Grass | 13780 | 0.3 | 4134 |
| Pavement | 8958 | 0.95 | 8610.1 |
| Buildings/Future | 1200 | 0.95 | 1140 |
| | 21938.0 | | 11.884 |

Weighted Coeff. (Cw) 0.54

DETERMINATION OF DETENTION VOLUME 100 Year

| TC (Min.) | i (In/Hr) | Cw A A in Acres | Q in (CFS) | Q out (CFS) | Qin - Qout (CFS) | Volume (CF) |
|---|---|---|---|---|---|---|
| 10 | 5.77 | 0.27 | 1.56 | 0.10 | 1.46 | 878 |
| 20 | 4.60 | 0.27 | 1.25 | 0.10 | 1.15 | 1375 |
| 30 | 3.90 | 0.27 | 1.06 | 0.10 | 0.96 | 1721 |
| 40 | 3.40 | 0.27 | 0.92 | 0.10 | 0.82 | 1970 |
| 50 | 3.00 | 0.27 | 0.81 | 0.10 | 0.71 | 2136 |
| 60 | 2.70 | 0.27 | 0.73 | 0.10 | 0.63 | 2273 |
| 70 | 2.50 | 0.27 | 0.68 | 0.10 | 0.58 | 2424 |
| 80 | 2.30 | 0.27 | 0.62 | 0.10 | 0.52 | 2510 |
| 90 | 2.10 | 0.27 | 0.57 | 0.10 | 0.47 | 2532 |
| 100 | 1.90 | 0.27 | 0.51 | 0.10 | 0.41 | 2488 |
| 110 | 1.80 | 0.27 | 0.49 | 0.10 | 0.39 | 2558 |
| 120 | 1.70 | 0.27 | 0.46 | 0.10 | 0.36 | 2595 |
| 130 | 1.60 | 0.27 | 0.43 | 0.10 | 0.33 | 2600 |
| 140 | 1.50 | 0.27 | 0.41 | 0.10 | 0.31 | 2573 |
| 150 | 1.45 | 0.27 | 0.39 | 0.10 | 0.29 | 2635 |
| 160 | 1.4 | 0.27 | 0.38 | 0.10 | 0.28 | 2680 |
| 170 | 1.3 | 0.27 | 0.35 | 0.10 | 0.25 | 2572 |
| 180 | 1.25 | 0.27 | 0.34 | 0.10 | 0.24 | 2577 |
| 190 | 1.2 | 0.27 | 0.33 | 0.10 | 0.23 | 2565 |
| 200 | 1.15 | 0.27 | 0.31 | 0.10 | 0.21 | 2538 |
| 210 | 1.1 | 0.27 | 0.30 | 0.10 | 0.20 | 2494 |
| 220 | 1 | 0.27 | 0.27 | 0.10 | 0.17 | 2255 |
| 230 | 0.95 | 0.27 | 0.26 | 0.10 | 0.16 | 2171 |
| 240 | 0.93 | 0.27 | 0.25 | 0.10 | 0.15 | 2187 |

Min. Volume to be Stored: **2680** CF

Underground Detention Field-

| | | |
|---|---|---|
| 771-772 | 0+310/2 | 155 cf |
| 772-773 | 310+797/2 | 553 cf |
| 773-774 | 797+1548/2 | 1172 cf |
| 774-774.85 | 1548+2247/2 | 1397 cf |
| | | **3277** cf |

## EAST PARKING LOT RECALCULATIONS

REVISIONS

CREEKWOOD ARCHITECTURE, INC.
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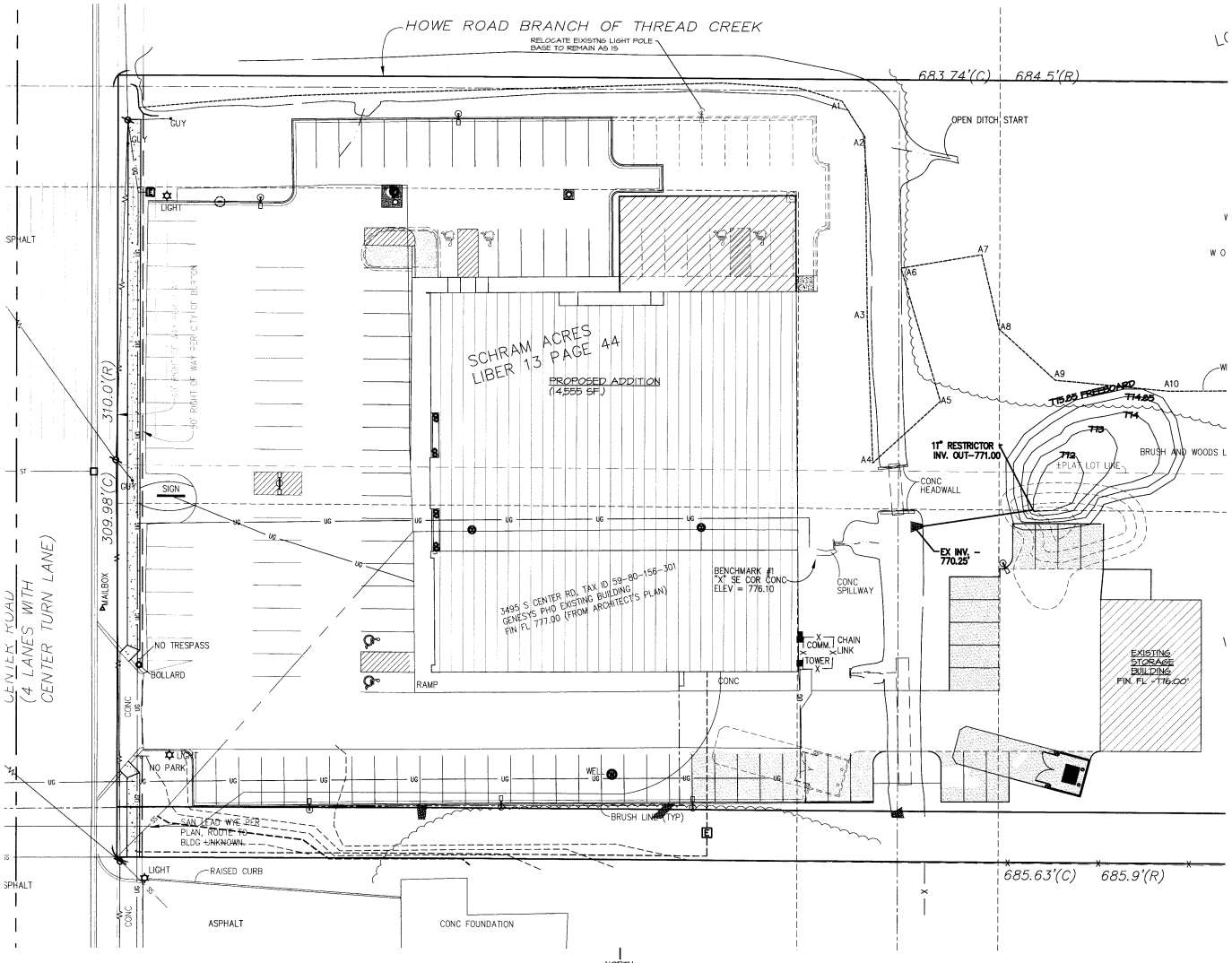
tel. (810) 742-0480 fax (810) 742-8393

SHEET TITLE
STORM SEWER PLAN
MISC. DETAILS

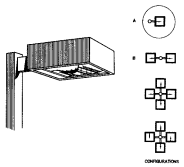
PROJECT
ADDITION TO EXISTING BUILDING
GENESYS PHO
CENTER RD. BURTON, MI

JOB NO. 16032-OF
DATE 18 AUG 16
DRAWN BY JYC. CHECKED BY R.A.S.
SHEET NO.
S5
OF 9




## LIGHTING PLAN

SCALE: 1" = 20'-0"




### SITE LIGHTING

EACH POLE LOCATION TO BE "LITHONIA" KAD W/ 400W METAL HALIDE LAMP - CONFIGURATION 1.

EACH POLE TO BE 20'-0" HIGH BRONZE ANODIZED ALUM W/ 24" HT BASE TOTAL HT. 12'-0".

CONCRETE POLE BASE TO BE 2'-0"Ø x 2'-0" ABOVE GRADE. CONCRETE BASE TO EXTEND A MINIMUM OF 4'-0" BELOW GRADE. PROVIDE (4)-#8 DOWELS AND ANCHOR BOLTS AS PER LIGHT POLE MANUFACTURER'S SPECS. CHAMPHOR TOP EDGE 1". ELECTRICAL CONDUIT TO BE INSTALLED IN BASE AS REQUIRED.

### STATISTICS

| DESCRIPTION | SYMBOL | AVG. | MAX. | MIN. | MAX./MIN. | AVG./MIN. |
|---|---|---|---|---|---|---|
| Lighting Poles | + | 1.70 fc | 12.37 fc | 0.11 fc | 114.44:1 | 15.75:1 |

### LUMINARE SCHEDULE

| SYMBOL | LABEL | QTY. | CATALOG # | DESCRIPTION | LAMP |
|---|---|---|---|---|---|
| | "A" | 6 | KAD 400 M R4 | DIECAST TYPE IV. SHORT, CUTOFF LUMINARE | ONE 400 WATT CLEAR METAL HALIDE - HORIZONTAL POSITION |

### NOTES

1. ALL LIGHT FIXTURES TO BE ON 20' HIGH POLES BRONZE ANODIZED ALUMINUM ON A CONCRETE POLE BASE TO BE 2'-0"Ø x 2'-6" HIGH ABOVE GRADE. CONCRETE BASE TO EXTEND A MIN. OF 4'-0" BELOW GRADE. PROVIDE (4) #8 DOWELS & ANCHOR BOLTS AS PER LIGHT POLE MANUFACTURERS SPECS. CHAMFER TOP EDGE 1". ELECTRICAL CONDUIT TO BE INSTALLED IN BASE AS REQUIRED PER MANUFACTURES SPECS.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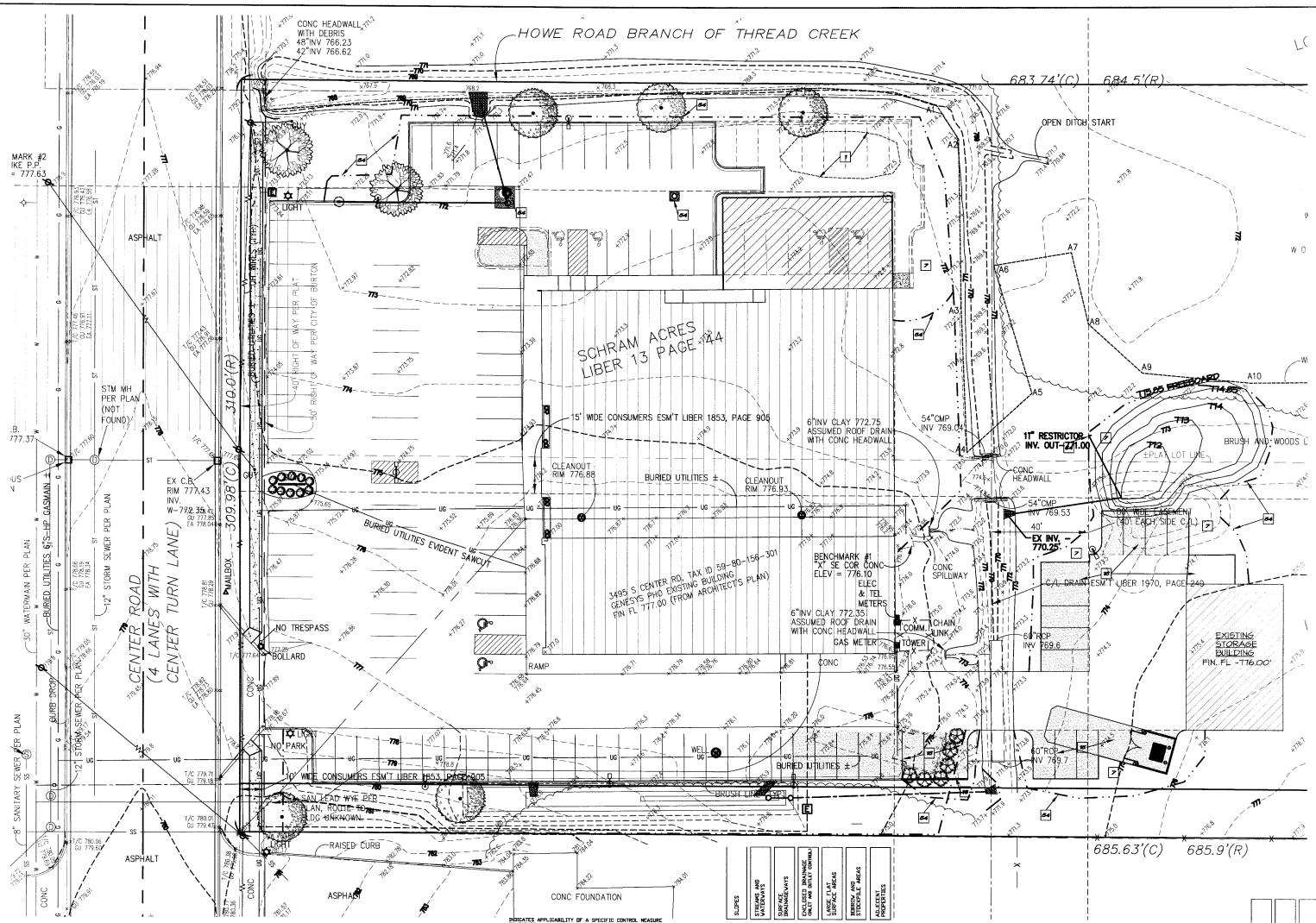
REVISIONS

SHEET TITLE: SITE LIGHTING PLAN

PROJECT: ADDITION TO EXIST.'G BUILDING
GENESYS PHO
3495 CENTER RD. BURTON, MI.

JOB NO. 16032-OF
DATE 18 AUG 16
DRAWN BY: J.V.C. CHECKED BY: R.A.R.
SHEET NO. S6
OF 9




NOTE:
1.) LIMIT OF EARTH CHANGE IS SHOWN AS THE BOUNDARY OF THE SILT FENCING.

2.) ALL CONSTRUCTION TRAFFIC WILL USE EXISTING PAVED DRIVE ON SOUTH SIDE OF EXISTING BUILDING. ALL WORKERS WILL PARK IN EXISTING ASPHALT AREAS.

NORTH

## SOIL EROSION CONTROL PLAN

SCALE: 1" = 20'-0"

INDICATES APPLICABILITY OF A SPECIFIC CONTROL MEASURE TO ONE OR MORE OF THE SEVEN PROBLEM AREAS.

| KEY | DETAIL | CHARACTERISTICS | A SLOPES | B STREAMS AND WATERWAYS | C SURFACE DRAINAGEWAYS | D ENCLOSED DRAINAGE (INLET AND OUTLET CONTROL) | E LARGE, FLAT SURFACE AREAS | F BERMS AND STOCKPILE AREAS | G ADJACENT PROPERTIES |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Stripping & Stockpiling Topsoil | TOPSOIL MAY BE STOCKPILED ABOVE BERMS AREAS TO ACT AS A DIVERSION. STOCKPILE SHOULD BE TEMPORARILY SEEDED. | * | | | | * | * | |
| 7 | Hydro-seeding | EFFECTIVE ON LARGE AREAS. MULCH TACKING AGENT USED TO PROVIDE IMMEDIATE PROTECTION UNTIL GRASS IS ROOTED. SHOULD NOT BE PREFORMED DURING RAIN. | * | | | | * | * | * |
| 8 | Sodding | PROVIDES IMMEDIATE PROTECTION. CAN BE USED ON STEEP SLOPES WHERE SEED MAY BE EASILY DISPLACED. EASIER TO PLACE. MAY BE REQUIRED IF DAMAGED. SHOULD INCLUDE PREPARED TOPSOIL BED. | * | | * | | * | * | * |
| 13 | Mulch, Rubble, Gravel | USED WHERE VEGETATION IS NOT EASILY ESTABLISHED. REDUCES RUNOFF AND VELOCITY OF HIGH CONCENTRATIONS. PREVENTS SOIL MOVEMENT. DISPERSES SHEET FLOW AT SYSTEM OUTLETS. | * | * | * | | | | |
| 15 | Fencing | PROTECTS AREAS HIGH CANNOT OTHERWISE BE PROTECTED. BUT INCREASES RUNOFF VOLUME AND VELOCITY. IRREGULAR SURFACE FILL HELP SLOW VELOCITY. | * | | | | * | | |
| 16 | Curb & Gutter | KEEPS HIGH VELOCITY RUNOFF IN PAVED AREAS FROM LEAVING PAVED SURFACE. CONCENTRATES AND DIRECTS RUNOFF TO ENCLOSED DRAINAGE SYSTEM OR PREPARED DRAINAGEWAY. | | | | | * | | * |

INDICATES APPLICABILITY OF A SPECIFIC CONTROL MEASURE TO ONE OR MORE OF THE SEVEN PROBLEM AREAS.

| KEY | DETAIL | CHARACTERISTICS | A SLOPES | B STREAMS AND WATERWAYS | C SURFACE DRAINAGEWAYS | D ENCLOSED DRAINAGE (INLET AND OUTLET CONTROL) | E LARGE, FLAT SURFACE AREAS | F BERMS AND STOCKPILE AREAS | G ADJACENT PROPERTIES |
|---|---|---|---|---|---|---|---|---|---|
| 34 | Sediment Basin | TRAPS SEDIMENT. RELEASES RUNOFF AT NON-EROSIVE RATES. CAN BE USED WITH SYSTEM OUTLETS. CAN BE USED WITH PIPE. | | * | * | * | | | |
| 35 | Storm Sewer | SYSTEM REMOVES COLLECTED RUNOFF FROM SITE. CONCENTRATED FLOW RAISES HEADS. CAN CONVEY LARGE QUANTITIES OF WATER. MAY BE USED TO CONVEY TO MUNICIPAL SEWER SYSTEM OR STABILIZED OUTFALL LOCATION. USE CATCH BASINS TO COLLECT SEDIMENT. | | | | | * | | * |
| 36 | Catch Basin, Drop Inlet | COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF. MAY USE FILTER CLOTH OVER INLET. | | | | | * | | * |
| 54 | | USES NON-TEXTILE FABRIC AND POST OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY. | * | | * | | * | | * |

REVISIONS

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SHEET TITLE: SOIL EROSION CONTROL PLAN

PROJECT: ADDITION TO EXIST'G BUILDING
GENESYS PHO
BURTON, MI

CENTER RD.
DRAWN BY: JVC.
CHECKED BY: R.A.S.

JOB NO. 16032-OF
DATE 15 AUG 16
SHEET NO. S7.0

# MICHIGAN UNIFIED KEYING SYSTEM

✱ INDICATES APPLICABILITY OF A SPECIFIC CONTROL MEASURE TO ONE OR MORE OF THE SEVEN PROBLEM AREAS

| KEY | DETAIL | CHARACTERISTICS | A SLOPES | B STREAMS AND WATERWAYS | C SURFACE DRAINAGEWAYS | D ENCLOSED DRAINAGE (inlets & outlets control) | E LARGE FLAT SURFACE AREAS | F BORROW AND STOCKPILE AREAS | G ADJACENT PROPERTIES |
|---|---|---|---|---|---|---|---|---|---|
| 1 | Stripping & Stockpiling Topsoil | TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIVERSION. STOCKPILE SHOULD BE TEMPORARILY SEEDED. | ✱ | | | | ✱ | ✱ | |
| 2 | Selective Grading & Shaping | WATER CAN BE DIVERTED TO MINIMIZE EROSION. FLATTER SLOPES EASE EROSION PROBLEMS. | ✱ | | | | ✱ | ✱ | ✱ |
| 3 | Grading Outlines | SAVES COST OF BRUSHING. PROVIDES NEW SPROUTS RETAINS EXISTING ROOT MAT SYSTEM. REDUCES WIND FALL AT NEW FOREST EDGE. DISCOURAGES EQUIPMENT ENTRANCE. | ✱ | | | | ✱ | | ✱ |
| 4 | Vegetative Stabilization | MAY UTILIZE A VARIETY OF PLANT MATERIAL STABILIZES SOIL. SLOWS RUNOFF VELOCITY. FILTERS SEDIMENT FROM RUNOFF. | ✱ | ✱ | ✱ | | ✱ | ✱ | ✱ |
| 5 | Seeding | INEXPENSIVE AND VERY EFFECTIVE STABILIZES SOIL. THIS MINIMIZES EROSION. REDUCES RUNOFF TO INFILTRATE SOIL. REDUCING RUNOFF VOLUME. SHOULD INCLUDE PREPARED TOPSOIL BED. | ✱ | | ✱ | | ✱ | ✱ | ✱ |
| 6 | Seeding with Mulch and/or Netting | FACILITATES ESTABLISHMENT OF VEGETATIVE COVER. EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITY. EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL. SHOULD INCLUDE PREPARED TOPSOIL BED. | ✱ | | ✱ | | | ✱ | ✱ |
| 7 | Hydro-seeding | EFFECTIVE ON LARGE AREAS. MULCH TACKING AGENT USED TO PROVIDE IMMEDIATE PROTECTION UNTIL GRASS IS ROOTED. SHOULD INCLUDE PREPARED TOPSOIL BED. | ✱ | | | | ✱ | ✱ | ✱ |
| 8 | Sodding | PROVIDES IMMEDIATE PROTECTION. CAN BE USED ON STEEP SLOPES AND AREAS HARD TO SEED DUE TO DIFFICULTY EASY TO PLACE. MAY BE REPAIRED IF DAMAGED. SHOULD INCLUDE PREPARED TOPSOIL BED. | ✱ | | ✱ | | ✱ | ✱ | ✱ |
| 9 | Vegetative Buffer Strip | SLOWS RUNOFF VELOCITY. FILTERS SEDIMENT FROM RUNOFF. REDUCES VOLUME OF RUNOFF ON SLOPES. | ✱ | ✱ | | | | | ✱ |
| 10 | Mulching | USED ALONE TO PROTECT EXPOSED AREAS FOR SHORT PERIODS. PROTECTS SOIL FROM RAIN. PREVENTS WIND BLOWING OF SOIL. MULCH MUST BE ANCHORED IN AREAS SUBJECT TO WIND. ANCHORING USED FROM TEMPERATURE EXTREMES. | ✱ | | | | ✱ | | ✱ |
| 11 | Roughened Surface | REDUCES VELOCITY AND INCREASES INFILTRATION. COLLECTS SEDIMENT. SEEDING, SODDING, AND MULCH BETTER THAN SMOOTH SURFACES. | ✱ | | | | ✱ | | |
| 12 | Compaction | HELPS HOLD SOIL IN PLACE. MAKING EXPOSED AREAS LESS VULNERABLE TO EROSION. | ✱ | | | | ✱ | | |
| 13 | Riprap, Rubble, Gabions | USED WHERE VEGETATION IS NOT EASILY ESTABLISHED. EFFECTIVE FOR HIGH VELOCITIES OF HIGH CONCENTRATIONS. REDUCES RUNOFF TO INFILTRATE SOIL. DISSIPATES ENERGY FLOW AT SYSTEM OUTLETS. | ✱ | ✱ | ✱ | | | | |
| 14 | Aggregate Cover | STABILIZES SOIL SURFACE. THIS PREVENTS EROSION. PERMITS CONSTRUCTION TRAFFIC IN ADVERSE WEATHER. MAY BE USED AS PART OF PERMANENT BASE CONSTRUCTION OF PAVED AREAS. | | | | | ✱ | | |
| 15 | Paving | PROTECTS AREAS PRICH CANNOT OTHERWISE BE PROTECTED. SUITABLE FOR HIGH VELOCITY FLOW. SMOOTH, REGULAR SURFACE WILL HELP SLOW VELOCITY. | ✱ | | | | ✱ | | |
| 16 | Curb & Gutter | KEEPS HIGH VELOCITY RUNOFF IN PAVED AREAS FROM ERODING. PROTECTS ADJACENT AREAS. DIVERTS RUNOFF TO RUNOFF TO ENCLOSED DRAINAGEWAY SYSTEM OR PREPARED DRAINAGEWAY. | | | | | ✱ | | ✱ |
| 17 | Benches | REDUCES RUNOFF VELOCITY BY REDUCING EFFECTIVE SLOPE LENGTH. COLLECTS SEDIMENT. PROVIDES ACCESS TO SLOPE FOR SEEDING, MULCHING AND MAINTENANCE. | ✱ | | | | | ✱ | |
| 18 | Diversion Berm | DIVERTS WATER FROM VULNERABLE AREAS. CAN BE USED AT CHECK POINTS TO PREPARED DRAINAGEWAYS. COULD BE PLACED AS PART OF NORMAL CONSTRUCTION OPERATION. | ✱ | | | | | ✱ | ✱ |
| 19 | Diversion Dikes | COLLECTS AND DIVERTS WATER TO REDUCE EROSION POTENTIAL. MAY BE INCORPORATED IN PERMANENT PROJECT DRAINAGE SYSTEMS. | ✱ | | | | | ✱ | ✱ |
| 20 | Berm & Dikes | DIVERTS WATER TO A PREPARED DRAINAGEWAY. MAY BE USED AT INTERVALS ALONGSIDE SLOPE FACE TO REDUCE EFFECTIVE SLOPE LENGTH. | ✱ | | | | | ✱ | ✱ |
| 21 | Filter Berm | CONSTRUCTED OF GRAVEL OR STONE. INTERCEPTS AND DIVERTS RUNOFF TO STABILIZED AREAS OR PREPARED DRAINAGE SYSTEMS. SLOWS RUNOFF AND COLLECTS SEDIMENT. | ✱ | ✱ | | | | | ✱ |
| 22 | Brush Berm | USED SLASH AND LOGS FROM CLEARING OPERATIONS. CAN BE CONVERTED AND REUSED RATHER THAN REMOVED. PROVIDES NEED FOR BURNING OR REMOVAL OF MATERIAL FROM SITE. | | | | | | | ✱ |
| 23 | Slope Channel | LEAST EXPENSIVE FORM OF DRAINAGEWAY. MAY BE USED ONLY WHERE GRADIENT IS VERY LOW AND WITH SOILS OF MINIMUM EROSION POTENTIAL. | | | ✱ | | | | |
| 24 | Grassed Waterway | HIGH MORE STABLE FORM OF DRAINAGEWAY THAN BARE CHANNEL. GRASS TENDS TO SLOW RUNOFF AND FILTER OUT SEDIMENT. USED WHERE BARE CHANNEL COULD BE ERODED. | | | ✱ | | | | |
| 25 | Slope Drain (Surface Pipe) | PREVENTS EROSION ON SLOPES WHEN RUNOFF CANNOT BE DIVERTED TO EDGE OF SLOPE AREA. USUALLY TEMPORARY. CAN BE CONSTRUCTED ON EXTENDED AS GRADING PROGRESSES. | ✱ | | | | | | |
| 26 | Slope Drain (Paved Sound Pipe) | PREVENTS EROSION ON SLOPES WHEN RUNOFF CANNOT BE DIVERTED TO EDGE OF SLOPE AREA. USUALLY PERMANENT. CAN BE CONSTRUCTED ON EXTENDED AS GRADING PROGRESSES. | ✱ | | | | | | |
| 27 | Slope Drain (Subsurface Pipe) | PREVENTS EROSION ON SLOPES WHEN RUNOFF CANNOT BE DIVERTED TO EDGE OF SLOPE AREA. USUALLY PERMANENT. CAN BE CONSTRUCTED AS GRADING PROGRESSES. | ✱ | | | | | | |
| 28 | Drop Spillway | SLOWS VELOCITY OF FLOW. REDUCING EROSIVE CAPACITY. | | ✱ | ✱ | | | | |
| 29 | Pipe Drop | REDUCES RUNOFF VELOCITY. REDUCES SEDIMENT AND TURBIDITY. CAN BE DESIGNED TO HANDLE LARGE VOLUMES OF FLOW. | | | ✱ | | | | |
| 30 | Pipe Spillway | REDUCES SEDIMENT AND TURBIDITY FROM RUNOFF. MAY BE PART OF PERMANENT EROSION CONTROL PLAN. | | | ✱ | | | | |
| 31 | Energy Dissipater | SLOWS RUNOFF VELOCITY TO NON-EROSIVE LEVEL. PERMITS SEDIMENT COLLECTION FROM RUNOFF. | ✱ | | ✱ | ✱ | | | |
| 32 | Level Spreader | CONVERTS COLLECTED CHANNEL OR PIPE FLOW BACK TO SHEET FLOW. AVOIDS CHANNEL EASEMENTS AND CONSTRUCTION OFF PROJECT SITE. SIMPLE TO CONSTRUCT. | | | ✱ | | | | |
| 33 | Sediment Trap | MAY BE CONSTRUCTED OF A VARIETY OF MATERIALS. SLOWS RUNOFF VELOCITY. REDUCES VOLUMETRIC FLOW. CAN BE CLEANED AND EXPANDED AS NEEDED. | | ✱ | ✱ | | | | |
| 34 | Sediment Basin | TRAPS SEDIMENT. RELEASES RUNOFF AT NON-EROSIVE RATES. CONTROLS RUNOFF AT SYSTEM OUTLETS. CAN BE VISUAL AMENITIES. | | ✱ | ✱ | ✱ | | | |
| 35 | Storm Sewer | SYSTEM REMOVES COLLECTED RUNOFF FROM SITE. PARTICULARLY FROM PAVED AREAS. CAN ACCEPT LARGE VOLUMES OF RUNOFF. MAY BE PART OF PERMANENT PROJECT DRAINAGE SYSTEM. OF STABILIZED OUTFALL LOCATION. USE CATCH BASINS TO COLLECT SEDIMENT. | | | | | ✱ | | ✱ |
| 36 | Catch Basin (Inlet Filter) | COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF. MAY USE FILTER CLOTH OVER INLET. | | | | | ✱ | | ✱ |
| 37 | Sod Filter | INEXPENSIVE AND EASY TO CONSTRUCT. PROVIDES IMMEDIATE PROTECTION. PROTECTS AREAS AROUND INLETS FROM EROSION. | | | | ✱ | | | |
| 38 | Stone Dike Filter | INEXPENSIVE AND EASY TO CONSTRUCT. CAN BE LOCATED AS NECESSARY TO COLLECT SEDIMENT. MAY BE USED IN CONJUNCTION WITH SNOW FENCE FOR ADDED STABILITY. | | | | ✱ | | | ✱ |
| 39 | Rock Filter | CAN UTILIZE MATERIAL FOUND ON SITE. EASY TO CONSTRUCT. FILTERS SEDIMENT FROM RUNOFF. | | | | ✱ | | | ✱ |
| 40 | Inlet Sediment Trap | EASY TO SHAPE. COLLECTS SEDIMENT. MAY BE CLEANED AND EXPANDED AS NEEDED. | | | | ✱ | | | |
| 41 | Stone and Rock Crossing | MAY BE ROCK OR CLEAN RUBBLE. MINIMIZES STREAM TURBIDITY. INEXPENSIVE. MAY ALSO SERVE AS DITCH CHECK OR SEDIMENT TRAP. | | ✱ | | | | | |
| 42 | Temporary Culvert | ELIMINATES STREAM TURBULENCE AND TURBIDITY. PROVIDES UNOBSTRUCTED PASSAGE FOR FISH AND OTHER WATER LIFE. CAPACITY FOR NORMAL FLOW CAN BE PROVIDED WITH EVENLY PACKED FILTERS OVER TOP. | | ✱ | | | | | |
| 43 | Culvert Sediment Trap | EASY TO INSTALL AT SILT. KEEPS CULVERT CLEAN AND FREE FLOWING. MAY BE CONSTRUCTED OF LUMBER OR LOGS. | | ✱ | | | | | ✱ |
| 44 | Jetty | DEFLECTS CURRENTS AWAY FROM STREAM BANK AREA. | | ✱ | | | | | |
| 45 | Temporary Stream Channel Change | NEW CHANNEL KEEPS NORMAL FLOWS AWAY FROM CONSTRUCTION. REQUIRES STATE PERMIT. | | ✱ | | | | | |
| 46 | Sheet Piling | PROTECTS ERODIBLE BANK AREAS FROM STREAM CURRENTS DURING CONSTRUCTION. TEMPORARY DISRUPTION WHEN REMOVED. | | ✱ | | | | | |
| 47 | Cofferdam | WORK CAN BE CONTINUED DURING NORMAL STREAM CONDITIONS. CLEAR WATER CAN BE PUMPED DIRECTLY BACK INTO STREAM. | | ✱ | | | | | |
| 48 | Construction Dam | PERMITS WORK TO CONTINUE DURING NORMAL STREAM FLOWS. CONTROLLED FLOODING CAN BE ACCOMPLISHED DURING PERIODS OF INACTIVITY. | | ✱ | | | | | |
| 49 | Check Dam | REDUCES FLOW VELOCITY. CATCHES SEDIMENT. MAY BE CONSTRUCTED OF LOGS, STRAW, ROCK, LUMBER, MASONRY, OR SAND BAGS. | | ✱ | ✱ | | | | |
| 50 | Weir | CONTROLS SEDIMENTATION IN LARGE STREAMS CAUSED MINIMAL TURBIDITY. | | ✱ | ✱ | | | | |
| 51 | Retaining Wall | REDUCES GRADIENT WHERE SLOPES ARE EXTREMELY STEEP. PERMITS RESTORATION OF EXISTING VEGETATION. KEEPS FILL STABLE IN CRITICAL AREAS. REQUIRES MAINTENANCE. | ✱ | | | | | | ✱ |
| 52 | Seepage Control | PREVENTS PIPING AND SOIL SLIPPAGE ON CUT SLOPES. | ✱ | | | | | | ✱ |
| 53 | Windbreak | MINIMIZES WIND EROSION. MAY BE SNOW FENCE. | | | | | ✱ | | |
| 54 | Silt Fence | USES INDUSTRIALIZE FABRIC AND POST OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY. | ✱ | | ✱ | | ✱ | | ✱ |

## SOIL EROSION & SEDIMENTATION CONTROL

1. Developer/property owner shall submit a detailed erosion control plan and obtain a Soil Erosion & Sedimentation Control Permit prior to any earth changes.
2. Construction operations shall be scheduled and performed so that preventative erosion control measures are in place prior to excavation and temporary stabilization measures are in place immediately following backfilling and/or grading operations.
3. Borrow and fill disposal areas will be selected and approved at time of plan review.
4. Special precautions will be taken in the use of construction equipment to prevent situations that promote erosion.
5. Cleanup will be done in a manner to insure that erosion control measures are not disturbed.
6. The project will continually be inspected for soil erosion and sediment control compliance. Deficiencies will be corrected by the developer within 24 hours.
7. Temporary erosion control measures shall be completely removed by the developer upon establishment of permanent control measures.

## CONSTRUCTION SEQUENCE

1. Excavation and stockpiling of soil.
2. Implementation of temporary erosion control measures; selective grading, diversions as required in field, protection of storm sewer facilities.
3. Periodic maintenance of affected erosion control measures.
4. Permanent measures; final grading, seeding and mulching.

SEE UNIFIED KEYING SYSTEM FOR EROSION CONTROL KEY NUMBERS

## DNR STREAM CROSSING NOTES

Construction of stream crossing shall be subject to the specifications for protection of natural resources at utility crossing as given in the Administration Rules for Act 346 (rules 24 through 29).

A siltation barrier shall be constructed immediately downstream of the construction site prior to the commencement of any construction activities. (See Michigan Unified Keying System for specified barrier) The siltation barrier shall be maintained in good working order throughout the duration of the project.

Backfill shall consist of inert materials which will not cause siltation nor contain soluble chemicals or organic matter which is biodegradable. All fill shall be contained in such a manner so as not to erode into any watercourse.

All raw banks shall be stabilized with riprap to three feet above the ordinary high water water mark, then seeded, fertilized and mulched, or sodded to prevent erosion.

Upon project completion the excess spoils shall be removed and disposed of in an approved upland site.

Siltation barrier may be removed upon placement of permanent erosion control measures.

## DEMOLITION

1. All demolition work shall conform to all local codes and ordinances. All demolition operations shall comply with MOSHA regulations (inspitor on they apply to the required work. A Soil Erosion Control Plan will be required prior to demolition.
2. The contractor shall remove and clear all trees, brush, fences, buildings, curb, and asphalt as shown on the plans or as directed by the Engineer.
3. All demolition material shall be properly removed from the site and disposed of in a legally designated disposal area. No on-site burning will be permitted. Permits and fees for disposal of demolition material shall be obtained and paid for by the contractor.
4. The contractor shall demolish and remove any items remaining from the existing building in its entirety including walls, foundations and footings. All buildings drains and utility leads shall be located and plugged. Utility lead work shall be coordinated with the appropriate utility companies.
5. Backfill excavated areas with clean granular fill compacted to 95% density in 9" lifts.
6. The contractor shall cut and seal the existing sanitary lead at the property line and shall disconnect the existing water service lead at the curbline shut-off valve on the house side of the valve. Notify GCDC-WWS (810-732-7870) prior to beginning this work.
7. At the conclusion of the demolition operations, the site area shall be left in a clean condition with any protective devices and barriers removed. All exposed areas shall be suitably topsoiled, seeded and mulched.

## NOTES TO CONSULTANTS

1. Item #1 – A detailed soil erosion control plan and permit is required for all projects that are within 500 ft. of any water course, or a project that disturbs one (1) acre or more of area. (See Matthew Royer: 810-732-7870)
2. Item #3 – A NPDES Stormwater or discharge permit is required for all construction activity that disturbs 5 acres or more of land. The fee for this State permit is currently set @ $125.00. The permits are processed thru the District office of NDNR @ Marrice.
3. Item #6 – The Engineer shall determine from John Murphy (810-732-7870) whether WWS or the municipality writes the top-in permits and this note shall be modified accordingly.

## NOTES

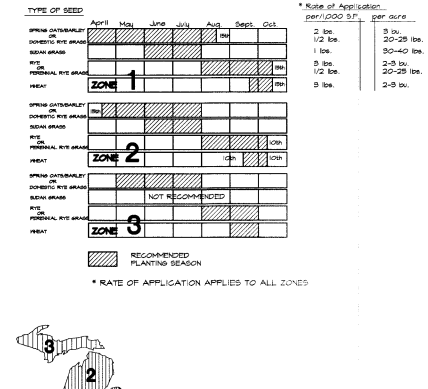
The following notes are to be used as applicable when submitting plans for review by the Genesee County Drain Commissioner. Use only those applicable and adapt them to your project. See note explanation to consult at end of this segment.

1. Sanitary sewer saddle tops shall be made by Genesee County Division WWS personnel. The developer shall obtain the required municipality sanitary sewer permit or the S construction permit and pay the Division of WWS the required fee for a saddle tap.
2. Sanitary sewer service lead from the public main line to the property line shall be a 6" VCP or PVC pipe with a SDR of 26 or lower. There shall be a separate lead for each individual
3. Sanitary mainline and service leads shall be encased in crushed limestone in accordance with GCDC-WWS detail.
4. Water service connection and curb box shall be installed in accordance with Genesee County Standard Detail by the developer.
5. All water service leads shall be "K" copper. Each unit shall have an individual lead.
6. All watermain pressure taps 4" and larger shall be constructed with cast iron topping sleeves and within a manhole structure per GCDC standard details.
7. For commercial sites the developer shall obtain and industrial pre-treatment permit or a waiver from GCDC-WWS. Contact J. Best @ 810-232-7662.
8. The site excavation contractor shall verify the sanitary sewer depth and be responsible for providing adequate slope of building sewer toward the mainline sewer in strict accordance with the governing authorities.
9. All existing utilities serving the property shall be properly terminated in compliance with city and/or county regulations. Remove all trees, including root structures, except those specifically noted to remain and those on property lines. Do not clear site prior to coordinating with the owner and the landscaping plan to determine all trees to remain.
10. Demolish and remove all existing structures, trees, fences, slabs, driveways and sidewalks. Visit site to determine extent of demolition work which may or may not be shown on plans. (See demolition notes.)
11. Verify exact location of underground utilities prior to beginning construction.
12. Contractor is to adjust any utility element meant to be flush with grade (clean out, valve boxes, manholes, catch basins, inlets, etc.) that is effected by site work or grade changes, whether specifically noted on plans or not.
13. The water supply for all commercial and industrial buildings shall be equipped with backflow prevention devices in accordance with BOCA codes. An approval of methods must be acquired fro the utility company.
14. All on site water services shall meet the requirements of standard detail 8W of GCDC-WWS.
15. The contractor shall notify WSS DIO (11-800-482-7171) three (3) working days prior to starting any excavation with power equipment.
16. The contractor/developer shall pay for and obtain all building permits, local permits and pay all charges for inspections and tests.

## NOTES TO CONSULTANTS

1. Where a public sanitary sewers or watermains are developed to serve a project the utility shall be extended to the limits of the property.
2. For item #2, the current rate for a saddle tap by GCDC-WWS is $100.00.
3. For item #3, commercial buildings shall use a 6" sanitary lead from the main to be structure. Lead shall connect to the mainline and not at a manhole structure.
4. Item #5, specify if the water service tap is to be made by GCDC-WWS or by the developer. Lead shall connect to the mainline and not at a manhole structure.
5. All public water supply systems shall be looped when feasible. The looping may be accomplished by phased construction but the original submission should show the final looped connection.
6. For commercial establishments that generate grit or grease an external grease trap shall be provided. (Show detail on plan with appropriate notes.) The domestic sewage should be designed to bypass the grease/grit trap.
7. For domestic water service, fire protection meters, or sprinkler meter include an appropriate adaptation of SD 15W. Show the plan and include the standard detail. The location of the external shut off valve for the domestic service must be located externally for shut off purposes.
8. Note #7, minimum slope for a commercial lead so one foot of fall per 100 feet of run. Show the invert at the structure and the slope to the property line. If the mainline is deep show the bends required to drop the 6" service lead down to the public system.

TEMPORARY SEEDING GUIDE




* RATE OF APPLICATION APPLIES TO ALL ZONES

PERMANENT SEEDING GUIDE

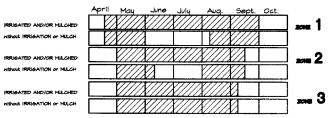



TABLE A ADAPTED SEEDING MIXTURES for various soil conditions & land uses-choose mixture number and then refer to TABLE B

| SITE CONDITIONS | MIXED USE: TO BE MOWED: LAWNS, GOLF, PARKING, ETC. | ADDITIONAL PLAY AREAS | WILDLIFE AREAS | NO REGULAR MOWING: EDGES & STEEP AREAS | WATERWAYS & POND AREAS |
|---|---|---|---|---|---|
| WELL-DRAINED SAND AND LOAMY SAND | SUNNY 1* SHADE 2* | 4 | 6 | 7 | 8 |
| WELL-DRAINED, MODERATELY COARSE TO MEDIUM TEXTURED SOIL SANDY LOAM, LOAMY SILT LOAM | SUNNY 1 SHADE 2 | 1 or 5 | 9,11 or 12 | 13 or 14 | 16 or 19 |
| WELL DRAINED CLAYEY SOILS | SUNNY 1* SHADE 2* | 1 or 5 | 9,10 or 12 | 13 or 14 | 16,17 or 19 |
| POORLY DRAINED SOILS WITHOUT ARTIFICIAL DRAINAGE | 3 | 3 or 5 | 10 or 15 | 12 | 17,18 or 19 |

* IRRIGATION WILL BE NEEDED
WITH ARTIFICIAL DRAINAGE USE WELL DRAINED GROUP SITE CONDITION ABOVE

TABLE B MIXTURE MIXTURES: POUNDS PER ACRE AND POUNDS PER 1000 SQ. FT. (IN DECIMALS)

| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GRASSES | CREEPING RED FESCUE | 20 | 80 | 10 | 20 | | | 15 | 15 | | | | | 10 | | | | | | 15 |
| | DOMESTIC RYE GRASS | 4 | | 10 | | | 5 | 5 | 5 | | | | | | | 5 | 5 | 5 | | |
| | KENTUCKY BLUEGRASS | 20 | 10 | 15 | | | | | | | | | | 2 | | | | | | 10 |
| | REDTOP | | | | | | | | | | | | | | | | | | | |
| | REED CANARY GRASS | | | | | | | | | | | | | | 8 | | | | | |
| | ROUGHSTALK BLUEGRASS | | 5 | | | | | | | | | | | | | | | | | |
| | SEASIDE BENTGRASS | | | | | | | | | | | | | | | | | | | |
| | SMOOTH BROMEGRASS | | | | | 5 | | | 5 | | | | | | | 5 | | 5 | 10 | |
| | TALL FESCUE | | | | 20 | | 10 | | | | | 20 | | 30 | 20 | | | 20 | 10 | |
| | TIMOTHY | | | | | | | | | 5 | | 2 | 3 | | | | | | | |
| LEGUMES | ALFALFA | | | | | 8 | | | 4 | | | | | | | | | | | |
| | ALSIKE CLOVER | | | | | | | | | 2 | | | | | | | | | | |
| | BIRDSFOOT TREFOIL | | | | | | | | | | | 3 | 5 | | | | | | | |
| | CROWN VETCH | | | | | | | | | | | | | | 20 | | | | | |
| | LADINO CLOVER | | | | | | | 1 | 1 | | | | | | | | | | | |
| | RED CLOVER | | | | | | | 2 | 2 | | | | | | | | | | | |
| | SWEET CLOVER | | | | | | | | | | | | | 10 | | | | | | |

no. from table A

Conversion Table

| lbs/Acre | lbs/1000 SF |
|---|---|
| 1 | .03 |
| 2 | .05 |
| 3 | .08 |
| 5 | .15 |
| 8 | .15 |
| 8 | .20 |
| 10 | .25 |
| 15 | .40 |
| 20 | .50 |
| 25 | .70 |
| 30 | .75 |

1. FIVE POUNDS OF RYE GRASS MAY BE ADDED TO THIS MIXTURE ON ERODIBLE SITE FOR INSTANT COVER
2. USE ONLY WHERE pH IS 6.5 OR HIGHER - INOCULATE LEGUMES WITH CORRECT INOCULANT
3. PROPER SEED MIXTURE NUMBER INDICATED USE ALL SPECIES IN THAT COLUMN

SOIL EROSION / SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

| CONSTRUCTION SEQUENCE | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEP | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| STRIP & STOCKPILE TOPSOIL | | | | | | | | | | | | |
| ROUGH GRADE/ SEDIMENT CONTROL | | | | | | | | | | | | |
| TEMP. CONTROL MEASURES | | | | | | | | | | | | |
| STORM FACILITIES | | | | | | | | | | | | |
| TEMP. CONSTRUCTION ROADS | | | | | | | | | | | | |
| FOUNDATIONS/ BLDG. CONSTRUCTION | | | | | | | | | | | | |
| SITE CONSTRUCTION | | | | | | | | | | | | |
| PERM. CONTROL MEASURES | | | | | | | | | | | | |
| FINISH GRADING | | | | | | | | | | | | |
| LANDSCAPING | | | | | | | | | | | | |

REVISIONS


CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393


SHEET TITLE
SOIL EROSION CONTROL LEGEND & NOTES

PROJECT
ADDITION TO EXIST.G BUILDING
GENESYS PHO
CENTER RD
FENTON TWP., MICH.
BURTON, MI

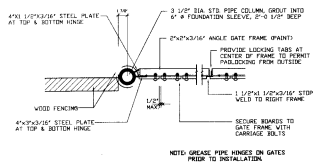
DRAWN BY: R.A.R.

JOB NO. 16032-01

DATE 18 AUG 16

SHEET NO.
S8
of

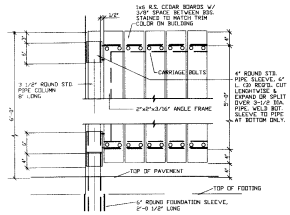
E.2.a




NOTE: GREASE PIPE HINGES ON GATES PRIOR TO INSTALLATION.

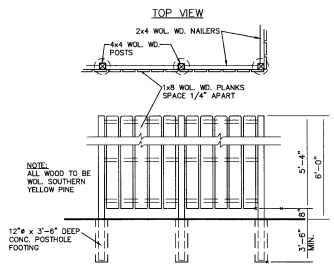
## GATE HINGE PLAN

NOT TO SCALE




## GATE HINGE ELEVATION

NOT TO SCALE




## WOOD SCREEN FENCE DETAIL

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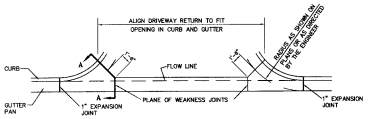
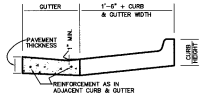
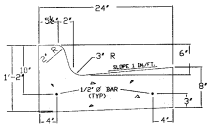



## CONC. DRIVE OPENING - DETAIL M

NO SCALE

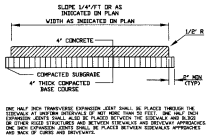



## SECTION A-A



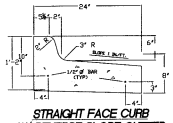

## STRAIGHT FACE CURB DETAIL

NO SCALE



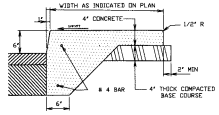

ONE HALF INCH TRANSVERSE EXPANSION JOINT SHALL BE PLACED THROUGH THE SIDEWALK AT UNIFORM INTERVALS (IF NOT MORE THAN 70 FEET, MORE THAN 10 FEET FROM ANY OTHER JOINT) AND ADJACENT TO BUILDINGS, CURBS, WALKS, OR OTHER FIXED STRUCTURES AND BETWEEN SIDEWALKS AND DRIVEWAY APPROACHES. ONE INCH EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALKS APPROACHES AND BACK OF CURBS AND DRIVEWAYS.

## CONCRETE SIDEWALK DETAIL



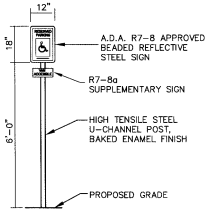

## STRAIGHT FACE CURB W/ REVERSE SLOPE GUTTER

NO SCALE




## THICKENED EDGE SIDEWALK DETAIL

NO SCALE




## BARRIER FREE SIGN DETAIL

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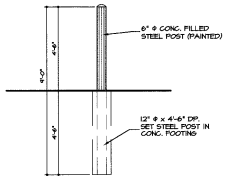


## CONCRETE FILLED POST DETAIL

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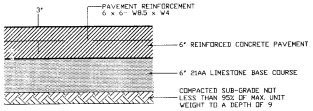


## REINFORCED CONCRETE PAVEMENT SECTION

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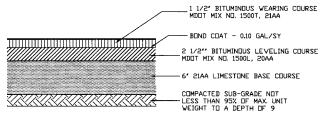


## STANDARD BITUMINOUS PAVEMENT SECTION

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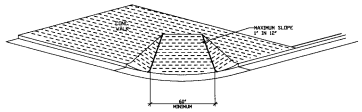


## HANDICAP RAMP DETAIL

NO SCALE

REVISIONS


CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
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SHEET TITLE: SITE DETAILS

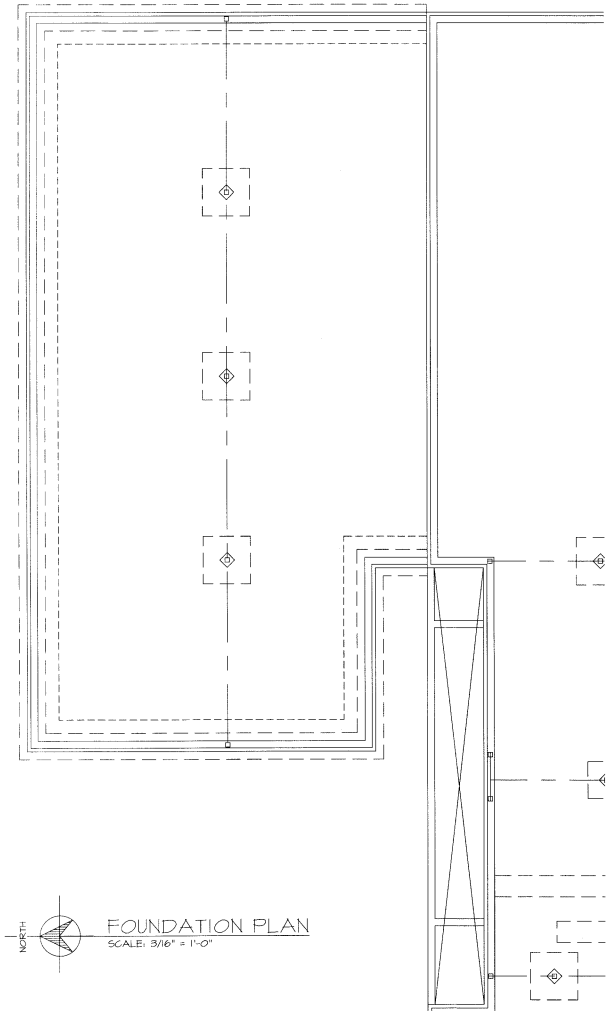
PROJECT: ADDITION TO EXIST'G BUILDING
GENESYS FHO
CENTER RD BURTON, MI

DRAWN BY: J.V.C. CHECKED BY: R.A.S.

JOB NO. 16-032-01

DATE 18 AUG 16

SHEET NO. S9 OF 9



NORTH

FOUNDATION PLAN
SCALE: 3/16" = 1'-0"

## CONCRETE:

1) ALL CONCRETE WORK AND PLACEMENT SHALL CONFORM TO THE LATEST ACI STANDARDS AND RECOMMENDATIONS. FREE FALL SHALL NOT EXCEED 10 FEET FOR ALL CONCRETE CONTAINING HIGH-RANGE WATER-REDUCER (SUPERPLASTICIZER) AND 5 FEET FOR ALL OTHER CONCRETE. PROVIDE ELEPHANT TRUNK, TREMIES OR OTHER PLACING EQUIPMENT OR OPENING IN SIDES OF FORMS AS REQUIRED TO LIMIT FREE FALL.

2) ALL CONCRETE SHALL ATTAIN THE FOLLOWING 28 DAY COMPRESSIVE STRENGTH:
-FOOTINGS, PIERS, FOUNDATION WALLS: 3000 PSI
-SLAB ON GRADE: 4000 PSI
-EXPOSED CONCRETE: 4000 PSI WITH 6+/-1% ENTRAINED AIR.

3) ALL CONCRETE SHALL BE PORTLAND CEMENT CONFORMING TO ASTM C150 AND AGGREGATE CONFORMING TO ASTM C33.

4) ALL REINFORCING BARS, DOWELS, AND TIES SHALL CONFORM TO ASTM A615, GRADE 60. ALL REINFORCING STEEL SHALL BE CONTINUOUS.

5) ALL REINFORCING SHALL BE FABRICATED AND PLACED IN ACCORDANCE WITH ACI 315 AND ACI 318, LATEST EDITION.

6) ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 FURNISHED IN FLAT MATS OR SHEETS, NOT IN ROLLS. PROVIDE MINIMUM 6" LAP BETWEEN SHEETS.

7) ALL SLAB REINFORCING SHALL BE SUPPORTED ON CHAIRS.

8) REINFORCING STEEL SPLICES SHALL BE IN ACCORDANCE WITH ACI 318-95 SECTIONS 12.15, 12.16. PROVIDE CLASS B SPLICES FOR VERTICAL AND HORIZONTAL WALL STEEL AND LONGITUDINAL AND TRANSVERSE FOOTING STEEL. PROVIDE CORNER BARS TO MATCH ALL HORIZONTAL REINFORCING IN FOOTING.

9) REINFORCING STEEL SPLICES SHALL BE IN ACCORDANCE WITH ACI 318-95 SECTIONS 12.15, 12.16. PROVIDE CLASS B SPLICES FOR VERTICAL AND HORIZONTAL WALL STEEL, AND LONGITUDINAL AND TRANSVERSE FOOTING STEEL. PROVIDE CORNER BARS TO MATCH ALL HORIZONTAL REINFORCING IN FOOTING.

10) PROVIDE CORNER BARS TO MATCH ALL REINFORCING IN ADJACENT WALLS OR FOOTINGS.

11) PROVIDE DOWELS BETWEEN ALL FOOTINGS, WALLS, AND PIERS TO MATCH SIZE AND SPACING OF VERTICAL REINFORCING.

12) CHAMFER ALL EXPOSED EDGES 3/4" UNLESS NOTED OTHERWISE.

13) SHOP DRAWINGS SHOWING REINFORCING DETAIL INCLUDING BAR SIZES, SPACING AND PLACEMENT SHALL BE SUBMITTED AND REVIEWED PRIOR TO FABRICATION.

(2) MINIMUM CONCRETE COVER SHALL BE (UNLESS OTHERWISE NOTED)

A. 3 INCHES @ UNFORMED SURFACES IN CONTACT WITH GROUND (FOOTING BOTTOMS)

B. 1/2 THE THICKNESS OF THE SLAB MIN. 1 INCH TOP COVER) @ SLABS ON GRADE

C. 2 INCHES @ FORMED SURFACES IN CONTACT WITH GROUND OR EXPOSED TO THE WEATHER (GRADE BEAMS, WALLS, ETC.)

D. IN ALL CASES, CLEARANCE NOT LESS THAN THE DIAMETER OF THE BARS.

FOOTING.

(3) CLEAN LOOSE RUST AND MILL SCALE, EARTH, ICE AND OTHER MATERIAL THAT MAY REDUCE THE CONCRETE BOND TO REINFORCEMENT

(4) COLUMN FOOTINGS SHALL BE CENTERED ON COLUMN CENTERLINES OR COLUMN BASE PLATE CENTERLINES UNLESS NOTED OTHERWISE

## NOTES:

1. REINFORCING REQUIRED FOR PAD FOOTINGS AS PER PLAN
2. WALL TRENCH FOOTINGS TO BE MIN 12"X42" WITH (2) #5 BARS TOP AND BOTTOM.
3. ALL ANCHOR BOLTS ARE TO BE WITH A MINIMUM OF 7" OF EMBEDMENT INTO THE CONCRETE FOOTING U.N.O. USE REID HEAD ANCHORS SYSTEM OR HILTI ACRYLIC ADHESIVE OR APPROVED EQUAL.
4. ALL FOOTING REINFORCEMENT SHALL HAVE LAPS PER LATEST ACI CODE.
5. FOOTING REBARS SHALL BE SUPPORTED AND TIED PER ACI CODES AND SECTION 1907.5 OF THE 2003 M.B.C.
6. FOOTINGS AND REINFORCEMENT SHALL BE INSPECTED PRIOR TO PLACEMENT OF CONCRETE.

## FOUNDATION NOTES:

1) FOOTINGS ARE DESIGNED TO BEAR ON NATURAL MATERIAL WITH AN ALLOWABLE SOIL BEARING CAPACITY OF 2000 PSF (VERIFY BY QUALIFIED TESTING AGENCY IN FIELD) IF SOIL OF THIS CAPACITY IS NOT FOUND AT THE ELEVATIONS INDICATED FOOTINGS SHALL BE LOWERED OR ENLARGED AT THE DIRECTION OF THE ENGINEER/ARCHITECT.

2) ALL SLABS SHALL BEAR ON CLEAN GRANULAR SOIL COMPACTED TO A MINIMUM OF 95% MODIFIED PROCTOR.

3) WHERE NEW FOOTINGS ARE ADJACENT TO EXISTING FOUNDATIONS, PLACE BOTTOM OF NEW FOOTING AT THE SAME ELEVATION AS THE EXISTING.

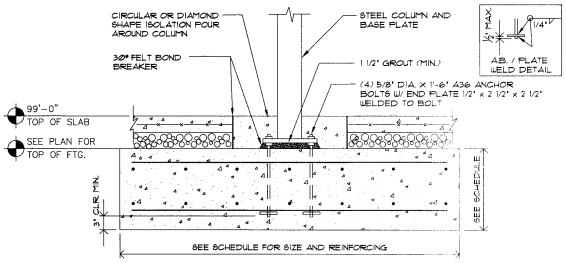
4) PROVIDE NECESSARY SHEETING, SHORING, BRACING, ETC. AS REQUIRED DURING EXCAVATIONS TO PROTECT SIDES OF EXCAVATION.

5) SEE MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS FOR PIPE SLEEVE, PIPING, CONDUIT, MANDRALS, INSERTS AND EMBEDDED ITEMS PRIOR TO CONSTRUCTION OF FOUNDATIONS.

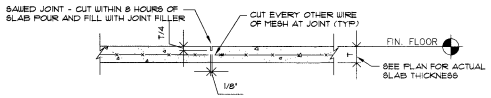
6) THE BOTTOM OF EXTERIOR FOOTINGS SHALL BE A MINIMUM OF 3.5 FEET BELOW FINISHED GRADE.

7) CONCRETE FOR FOOTINGS AND GRADE BEAMS MAY BE PLACED AT CONTRACTOR'S OPTION INTO UNFORMED TRENCHES. IT IS THE CONTRACTORS RESPONSIBILITY TO MINIMIZE SLOUGHING OF SIDEWALLS. WHERE SLOUGHING OCCURS, REMOVE SLOUGHED SOIL AND/OR OVER EXCAVATE. CUT TRENCH FOOTING SIDES IN VERTICAL MANNER TO NOT ALLOW TRENCH FOOTING TO "MUSHROOM OUT" NEAR THE TOP.

8) UNDERGROUND UTILITIES OR PIPES SHALL NOT BE PLACED BELOW FOOTINGS. IF ANY SUCH CONDITION OCCURS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT AND DROP THE BOTTOM OF THE FOOTING IN ORDER TO CLEAR THE PIPE.

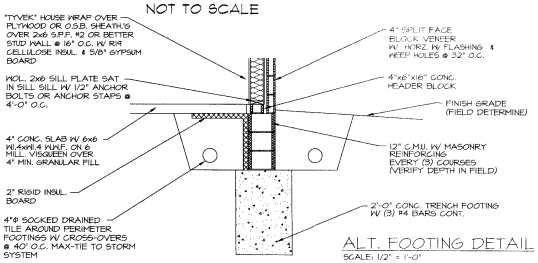



SECTION @ INT. COL. FTG.
NOT TO SCALE




1. PROVIDE TOOLED JOINTS IN FRESH CONCRETE EACH SIDE OF WALLS WHERE SLABS POUR THRU DOORWAYS.
2. PROVIDE A #4 BAR X 3'-0" LONG AT MID-DEPTH OF THE SLAB PERPENDICULAR TO JOINTS THAT TERMINATE AT A PERPENDICULAR JOINT.

SLAB CONTROL JOINT
NOT TO SCALE




ALT. FOOTING DETAIL
SCALE: 1/2" = 1'-0"

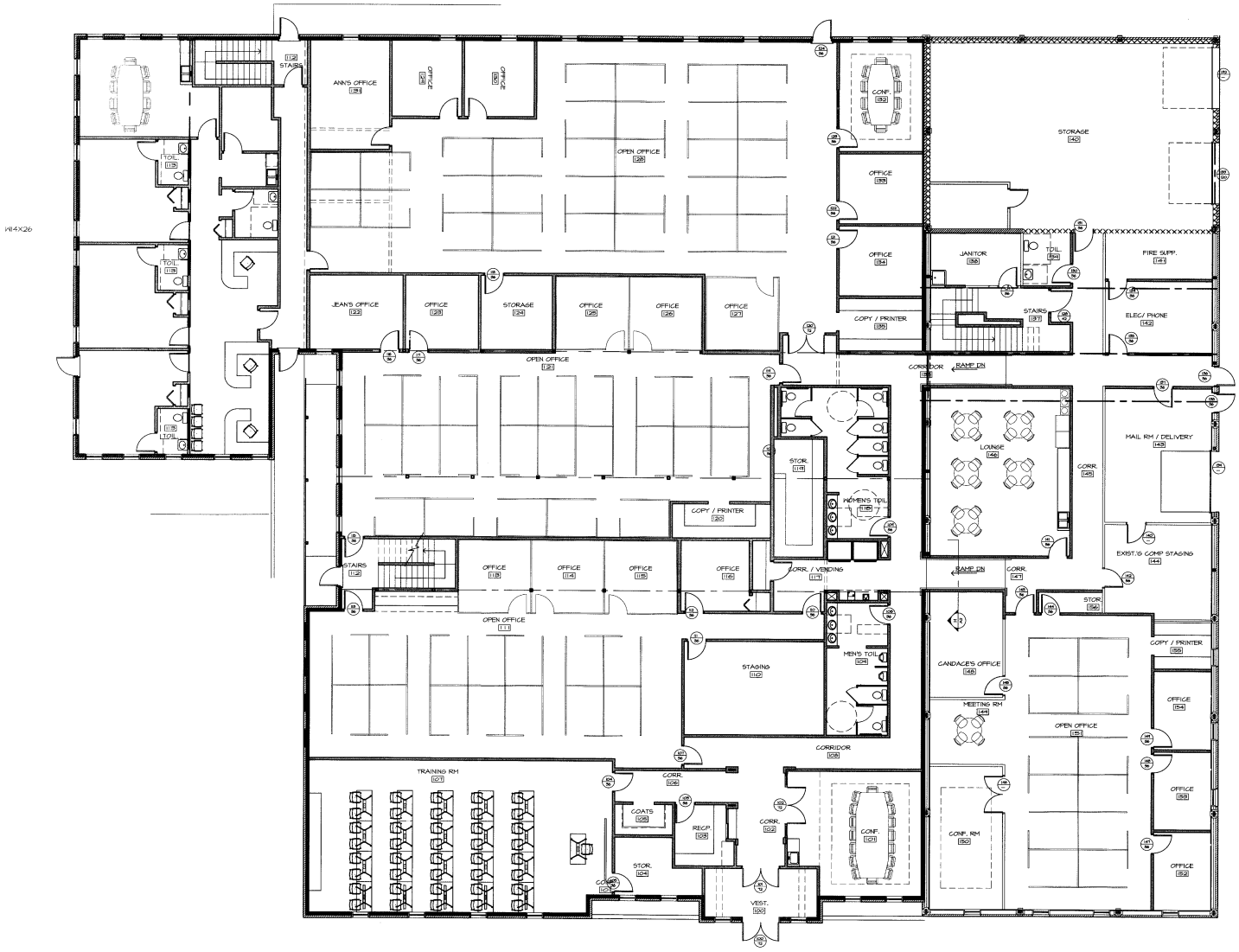

CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393


REVISIONS
1 10 DEC. 04

SHEET TITLE
FOUNDATION PLAN
GENERAL NOTES
MISC. DETAILS

PROJECT
ADDITION TO EXIST. 16 BUILDING
GENESYS PHO
CENTER RD BURTON, MI
PREPARED BY: D. A. E.

JOB NO. 16038-04
DATE 18 JULY 16
SHEET NO.
A1
OF 16




NORTH

COMPOSITE FLOOR PLAN

SCALE: 1/8" = 1'-0"

REVISIONS

CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel (810) 742-0480 fax (810) 742-8393

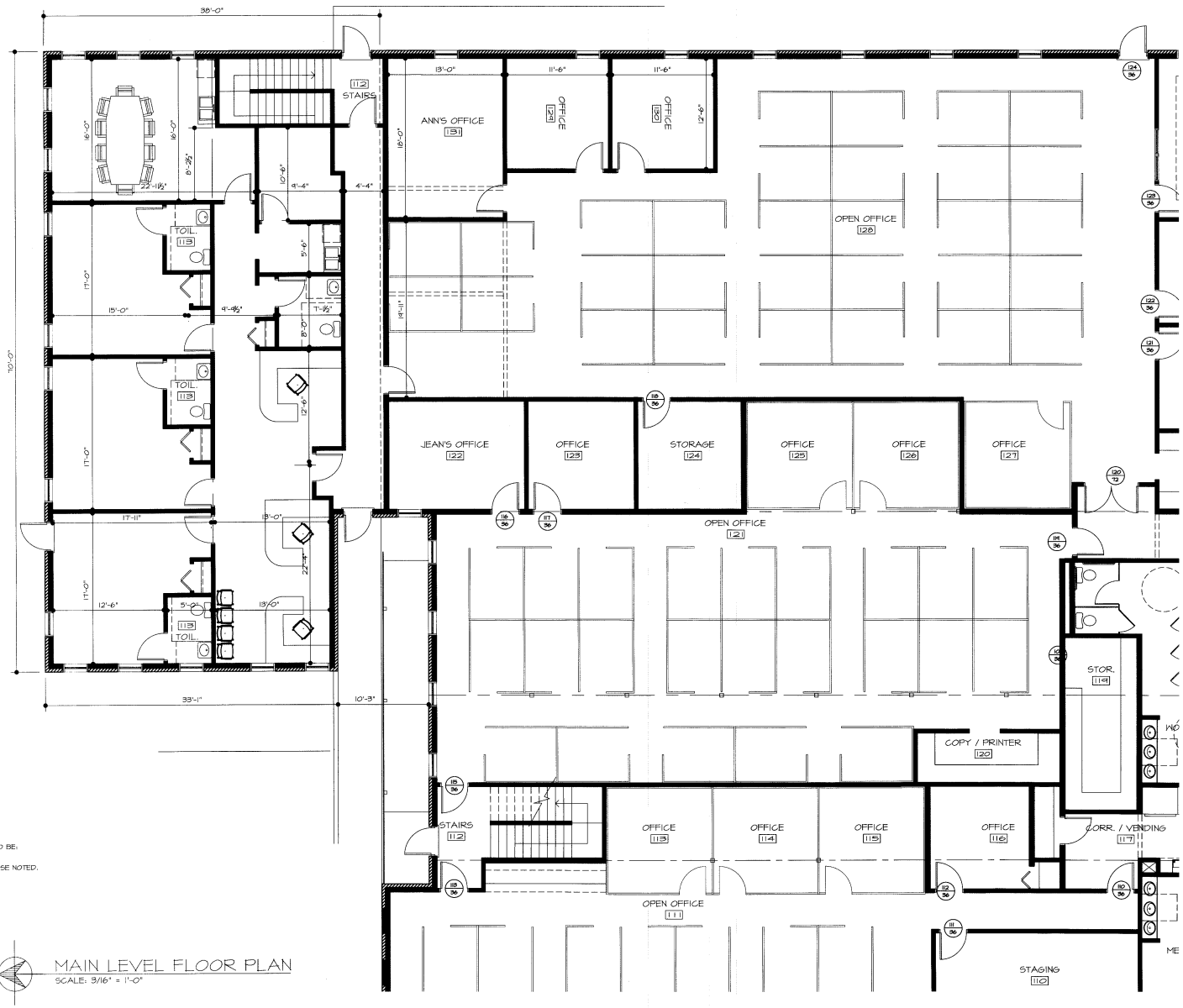
SHEET TITLE: COMPOSITE FLOOR PLAN

PROJECT: ADDITION TO EXIST.'G BUILDING
GENESYS PHO
CENTER RD. BURTON, MI

JOB NO. 16038-01

DATE: 18 JULY 16

SHEET NO. A2




NOTE:
1.) ALL WINDOWS TO BE:
3452
TR3420
UNLESS OTHERWISE NOTED.

NORTH

MAIN LEVEL FLOOR PLAN
SCALE: 3/16" = 1'-0"

## WALL LEGEND:

- EXISTING ¼" CEMENT BOARD OVER ½" PLYWOOD SHEATHING ON 2x4 WOOD STUDS @ 16" O.C. W/ 3½" BATT INSUL. & ⅝" GYP BD. ADDITIONAL 2x4 WOOD STUD @ 16" O.C. INT. W/ 3½" BATT INSUL. W/ ⅝" GYP BD FINISHED INTERIOR SIDE
- NEW 4" BRICK VENEER W/ 1" MIN. AIR GAP OVER EXISTING ¼" CEMENT BOARD OVER ½" PLYWOOD SHEATHING ON 2x4 WOOD STUDS @ 16" O.C. W/ 3½" BATT INSUL. & ⅝" GYP BD. ADDITIONAL 2x4 WOOD STUD @ 16" O.C. INT. W/ 3½" BATT INSUL. W/ ⅝" GYP BD FINISHED INTERIOR SIDE
- EXISTING 8" CONC. MASONRY WALL W/ 4" BRICK VENEER
- 2X6 WOOD STUDS @ 16" O.C. W/ 'TYVEK' WRAPPED OVER ½" PLYWOOD OR OSB SHEATHING W/ R19 CELLOUSE INSULATION W/ VAPOR BARRIER UNDER ⅝" GYP BD INTERIOR
- 6" METAL STUD WALLS @ 16" O.C. W/ 5/8" GYP. BD. OVER BOTH SIDES
- 3 ⅝" METAL STUD WALLS @ 16" O.C. W/ 5/8" GYP. BD. OVER BOTH SIDES
- 6" METAL STUD WALLS @ 16" O.C. W/ 5/8" FIRECODE GYP BD OVER BOTH SIDES TIGHT TO UNDERSIDE OF CEILING DECK - 1 HR RATED ASSEMBLY (UL RATED #U425)
- 2½" C-H METAL STUD WALLS @ 16" O.C. W/ 5/8" FIRECODE GYP BD ONE SIDES & 1" GYP LINER PANEL ONE SIDED, TIGHT TO UNDERSIDE OF FLOOR OR ROOF DECK - 1 HR RATED ASSEMBLY (UL RATED #U419)

REVISIONS


CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393


SHEET TITLE
FLOOR PLAN

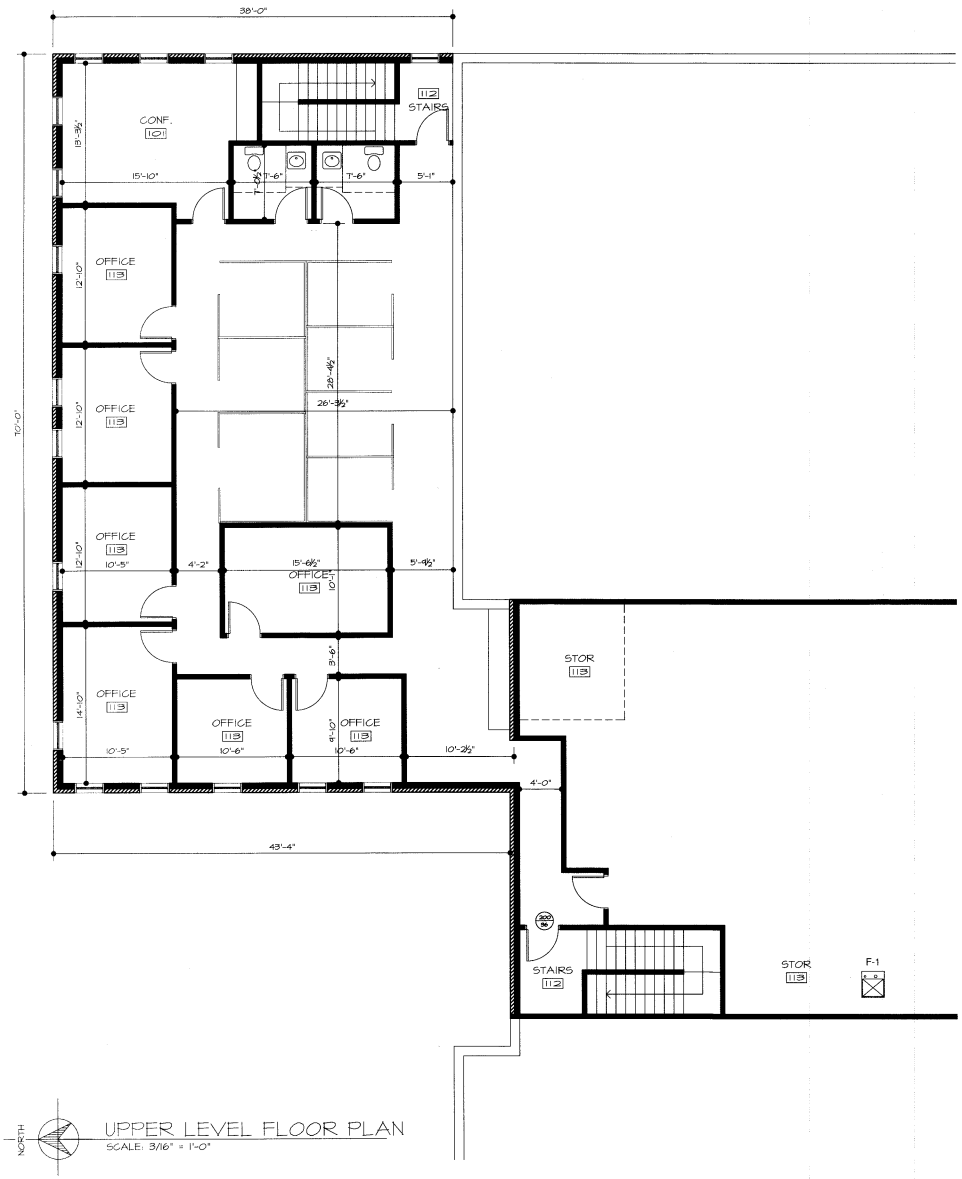
PROJECT
ADDITION TO EXIST'G BUILDING
GENESYS PHO
CENTER RD BURTON, MI

DRAWN BY J.V.C. CHECKED BY R.A.S.

JOB NO16039-01

DATE 15 JULY 16

SHEET NO.
A3
OF 16




NORTH

UPPER LEVEL FLOOR PLAN

SCALE: 3/16" = 1'-0"

REVISIONS

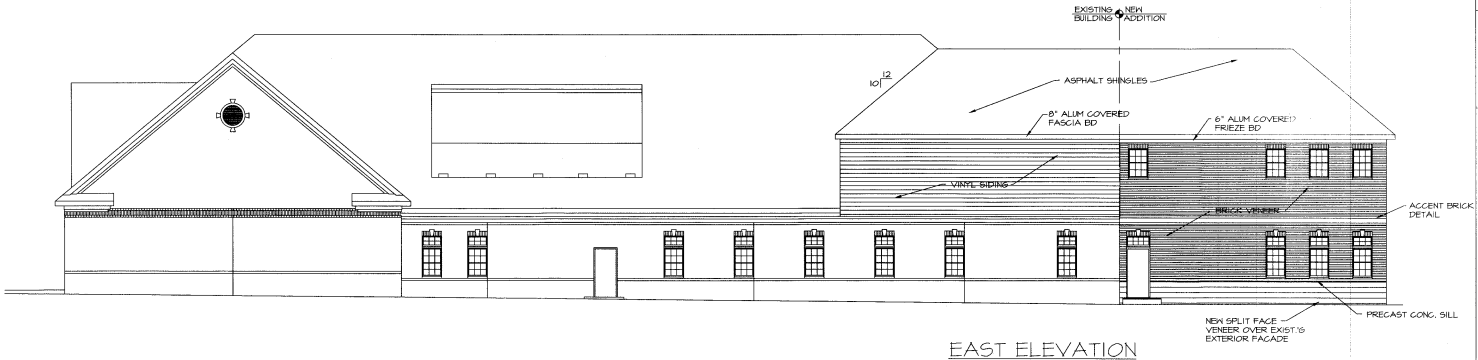
CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393

SHEET TITLE
FLOOR PLAN

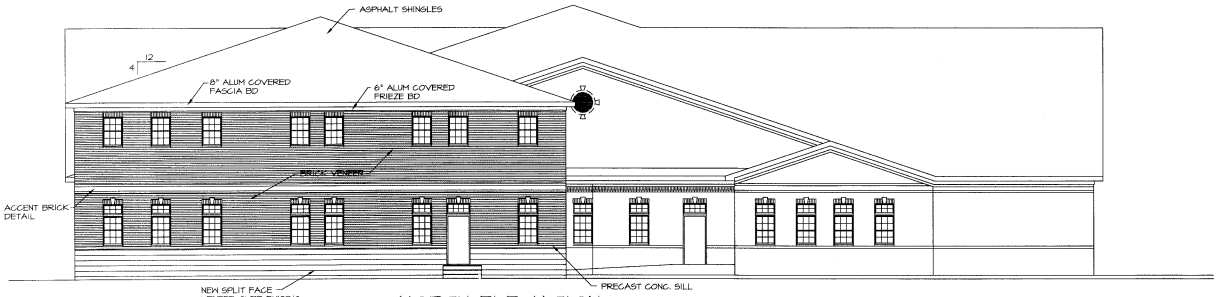
PROJECT
ADDITION TO EXISTING BUILDING
GENESYS PHO
CENTER RD BURTON, MI

JOB NO. 16036-OF
DATE 18 JULY 16
DRAWN BY J.V.C.
CHECKED BY R.A.S.
SHEET NO.
A4

WEST ELEVATION
SCALE: 1/8" = 1'-0"




EAST ELEVATION
SCALE: 1/8" = 1'-0"




NORTH ELEVATION
SCALE: 1/8" = 1'-0"

REVISIONS

CREEKWOOD ARCHITECTURE, INC.
1111 s. creekwood burton, michigan 48509
tel. (810) 742-0480 fax (810) 742-8393

SHEET TITLE
EXTERIOR ELEVATIONS

PROJECT
ADDITION TO EXIST.'G BUILDING
GENESYS PHO
CENTER RD BURTON, MI

DRAWN BY: J.V.G. CHECKED BY: R.A.S.

JOB NO. 09047-OP
DATE 19 NOV. '09
SHEET NO.
A5
OF 16

# SPR #16-40

By: Burton Bee, LLC.
19700 Hall Rd., Suite 790
Clinton Twp., MI 48038

Re: 2350 S. Center Rd. Burton, MI 48529

For: AT&T Retail Store

**ATTACHMENTS:**

- 16-40 (PDF)

# City of Burton

Department of Public Works
4093 Manor Drive
Genesee County, Burton, Michigan 48519
(810) 742-9230

## APPLICATION FOR ADMINISTRATIVE SITE PLAN REVIEW

DATE FILED: 6-29-16

FEE: **$75.00**

RECEIPT NO: _____

CHECK NO: 20275

SPR #: 16-40

**PLEASE PRINT**

DATE: 6-22-16

APPLICANTS NAME: BURTON BEE, LLC

APPLICANTS ADDRESS: 19700 HALL RD., SUITE 790, CLINTON TWP., MI 48038

APPLICANTS PHONE NO: 586-263-3800

PROPOSED NAME OF BUSINESS: AT & T PRIME WIRELESS

SITE ADDRESS: 2350 S. CENTER RD, BURTON, MI 48529

SUBDIVISION & LOT # OR PARCEL NUMBER: 59-21-529-094

TYPE: ☒ CHANGE OF OWNERSHIP/USE ☐ CONSTRUCTION LESS THAN 2%

USE OF STRUCTURE: AT & T RETAIL STORE

SQ FOOTAGE OF PROPERTY: .55 ACRES

SQ FOOTAGE OF STRUCTURE: 3059 SF

NUMBER OF EMPLOYEES/SEATS: 6 EMPLOYEES

APPLICANTS SIGNATURE: _____

*** ALSO ATTACH A FLOOR PLAN OF THE PROPOSED BUSINESS.

Attachment: 16-40 (2668 : SPR #16-40)

# SPR #16-41

By: Matthew Church
16048 Silvercrest Dr.
Fenton, MI 48430

Re: 4507 Davison Rd. Burton, MI 48509

For: Used Vehicle Sales

**ATTACHMENTS:**

- 16-41 (PDF)

# City of Burton

Department of Public Works
4093 Manor Drive
Genesee County, Burton, Michigan 48519
(810) 742-9230

## APPLICATION FOR ZONING REVIEW

DATE FILED: 7-15-16

FEE: **$40.00**

RECEIPT NO: _____

CHECK NO: 1004

SPR #: 16-41

**PLEASE PRINT**

DATE: 7-11-2016

APPLICANTS NAME: MATTHEW CHURCH

APPLICANTS ADDRESS: 16048 Silvercrest Dr. Fenton, MI 48430

APPLICANTS PHONE NO: (810) 625-8512

PROPOSED NAME OF BUSINESS: UNEEK AUTO GROUP

PROPOSED TYPE OF BUSINESS: AUTO SALES

SITE ADDRESS: 4507 Davison Rd. Burton, MI 48509

USE OF STRUCTURE: sales office

SQ FOOTAGE OF PROPERTY: ≈ 10,000 ft²

SQ FOOTAGE OF STRUCTURE: 600 ft²

NUMBER OF EMPLOYEES/SEATS: 1

APPLICANTS SIGNATURE: _____

*** ALSO ATTACH A FLOOR PLAN OF THE EXISTING AND PROPOSED BUSINESS.

Attachment: 16-41 (2669 : SPR #16-41)

# SPR #16-42

By: Hani Poorsaber
6220 Wilderness Pte.
Grand Blanc, MI 48439

Re: 5516 Atherton Rd. Burton, MI 48519

For: Balloon Shop

**ATTACHMENTS:**

- 16-42 (PDF)

# City of Burton

Department of Public Works
4093 Manor Drive
Genesee County, Burton, Michigan 48519
(810) 742-9230

## APPLICATION FOR ZONING REVIEW

DATE FILED: 7-18-16

FEE: **$40.00**

RECEIPT NO: _____

CHECK NO: cash

SPR #: 16-42

**PLEASE PRINT**

DATE: 6-23-16

APPLICANTS NAME: HANI POORSABER

APPLICANTS ADDRESS: ~~5516 E Atherton Rd Burton, MI 48519~~ 6220 wilderness Pt Grand Blanc, MI 48439

APPLICANTS PHONE NO: 747-~~248~~ 242-8975 - 810-624-5267

PROPOSED NAME OF BUSINESS: Balloon shop

PROPOSED TYPE OF BUSINESS: Retail

SITE ADDRESS: 5516 E Atherton

USE OF STRUCTURE: Retail

SQ FOOTAGE OF PROPERTY: 15,000 SQ

SQ FOOTAGE OF STRUCTURE: 1,120

NUMBER OF EMPLOYEES/SEATS: 3

APPLICANTS SIGNATURE: HA

*** ALSO ATTACH A FLOOR PLAN OF THE EXISTING AND PROPOSED BUSINESS.

Attachment: 16-42 (2670 : SPR #16-42)

# SPR #16-44

By: Ken Lewaar
1409 10th St.
Bay City, MI 48708

Re: 1245 S. Center Rd. Burton, MI 48509

For: Spirit Halloween Store

**ATTACHMENTS:**

- 16-44 (PDF)

# City of Burton

Department of Public Works
4093 Manor Drive
Genesee County, Burton, Michigan 48519
(810) 742-9230

## APPLICATION FOR ZONING REVIEW

DATE FILED: 8-29-16

FEE: **$40.00**

RECEIPT NO:

CHECK NO: Cash

SPR #: 16-44

**PLEASE PRINT**

DATE: 8/29/16

APPLICANTS NAME: KEN LEINAAR

APPLICANTS ADDRESS: 1409 10th ST. BAY CITY, MI 48708

APPLICANTS PHONE NO: 989-327-5171

PROPOSED NAME OF BUSINESS: SPIRIT HALLOWEEN

PROPOSED TYPE OF BUSINESS: Seasonal retail store

SITE ADDRESS: 1245 S. Center Rd.

USE OF STRUCTURE: Seasonal Retail

SQ FOOTAGE OF PROPERTY:

SQ FOOTAGE OF STRUCTURE: 7500

NUMBER OF EMPLOYEES/SEATS: 8-12

APPLICANTS SIGNATURE: Ken Leinaar

*** ALSO ATTACH A FLOOR PLAN OF THE EXISTING AND PROPOSED BUSINESS.

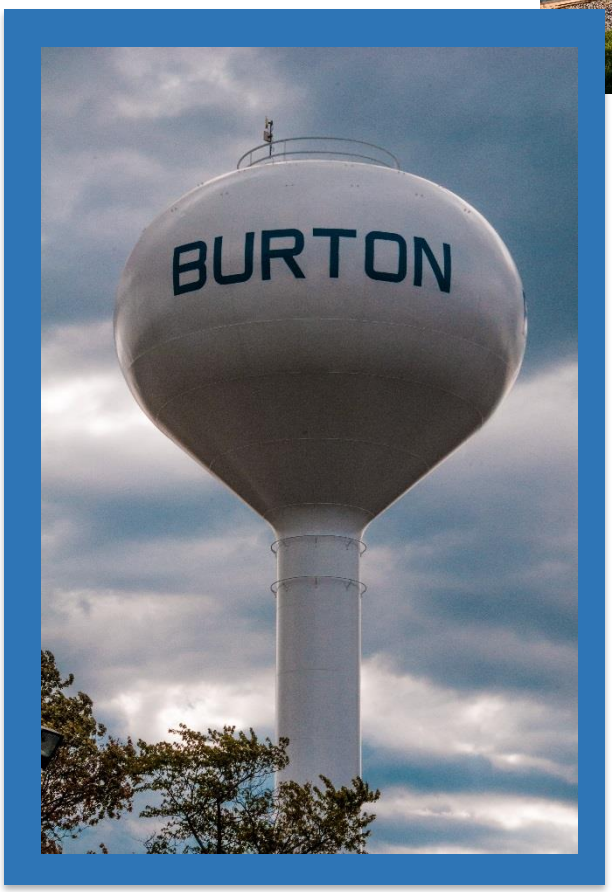
Attachment: 16-44 (2672 : SPR #16-44)

# Progress Report on Master Plan

Presentation on the progress of the Master Plan by ROWE Professional Services Company

**ATTACHMENTS:**

- September Meeting Back up (PDF)



# CITY OF BURTON

## Master Plan 2016-2036

Adopted: _____

*With assistance by:*

ROWE PROFESSIONAL SERVICES COMPANY

Engineering – Surveying – Aerial Photography/Mapping
Landscape Architecture – Planning

Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

# The City of Burton

# Master Plan 2016-2036

Adopted: _____

**Acknowledgements to:**

*City Officials*
Mayor: Paula Zelenko
Deputy Planning Official: Amber Abbey

*City Council*
President: Steven Heffner
Vice President: Duane Haskins
Ellen Ellenburg
Steven Hatfield
Thomas Martinbianco
Dennis O'Keefe
Vaughn Smith

*City Planning Commission*
Chairman: Deb Walton
Vice Chairman: Kevin Burge
Ellen Ellenberg
Mary Ann White
Robert Johnson
Tom Gorang
John Benthall
Kris John

*City Attorney*
Amanda Doyle

*Planning Consultant*
ROWE Professional Services Company
540 S. Saginaw Street, Suite 200
P.O. Box 3748
Flint, MI 48502
(810) 341-7500 Fax: (810) 341-7573

ROWE PROFESSIONAL SERVICES COMPANY
Engineering – Surveying – Aerial Photography/Mapping
Landscape Architecture – Planning

DRAFT

Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

# City Council Resolution of Adoption Placeholder

DRAFT

Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

# Planning Commission Resolution of Adoption Placeholder

DRAFT

Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

# Contents

**Executive Summary**.....

**Chapter 1. Community Description**.....**1-1**

Community Profile .....1-1

Brief History of the City of Burton .....1-1

Genesee County .....1-1

School Districts.....1-2

City of Burton Master Plan – Preliminary Population Analysis.....1-3

Population Analysis.....1-3

Housing Analysis .....1-8

Economic Analysis.....1-13

**Chapter 2. Infrastructure** .....**2-1**

Utilities .....2-1

Water System.....2-1

Sanitary Sewer .....2-5

Drainage .....2-7

Transportation .....2-7

Street, Road, and Highway Network.....2-7

Mass Transportation Authority Service .....2-14

Railroads.....2-16

**Chapter 3. Natural Features** .....**3-1**

Wetlands .....3-1

Floodplains .....3-6

Flint River Watershed Coalition Gilkey Creek Plan .....3-8

**Chapter 4. Existing Land Use Inventory**.....**4-1**

Existing Trends .....4-1

Commercial Uses.....4-1

Industrial Uses.....4-1

Residential Uses .....4-2

Public & Quasi-Public .....4-2

Agricultural and Vacant.....4-2

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Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

**Chapter 5. Other City of Burton Existing Plans ..... 5-1**
DDA Visioning Plan ..... 5-1
Current District Assessment ..... 5-1
Future Vision & Design Guidelines ..... 5-2
Implementation ..... 5-3
Parks and Recreation Plan Inventory 2012 ..... 5-4
Goals and Objectives ..... 5-5
Action Program ..... 5-7
City of Burton Master Plan – Master Plans in Adjacent Communities ..... 5-8
City of Flint ..... 5-8
Flint Township ..... 5-10
Grand Blanc Township ..... 5-11
Davison Township ..... 5-12
Richfield Township ..... 5-13
Atlas Township ..... 5-14
Mundy Township ..... 5-15
Genesee Township ..... 5-16
**Chapter 6. Target Market Analysis ..... 6-1**
Introduction ..... 6-1
Executive Summary ..... 6-1
Summary of Market Potential ..... 6-2
**Chapter 7. Retail Market Analysis ..... 7-1**
Introduction ..... 7-1
Saginaw Street Corridor ..... 7-1
Center Road Corridor ..... 7-3
**Chapter 8. Public Input ..... 8-1**
Summary of Focus Group and Stakeholder ..... 8-1
Introduction ..... 8-1
Characteristics that make the Best of Burton ..... 8-2
Characteristics that are suggested to be changed in the City of Burton ..... 8-3
Topics Based Comments ..... 8-5
Suggested Programs, Policies, and Zoning Ordinances ..... 8-10
Capital Improvements ..... 8-11

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Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

More About the Organizations ....8-11
Community Survey ....8-13
Visioning Session ....8-14
Open House ....8-14
**Chapter 9. Goals and Objectives ....9-1**

## Table of Maps

Map 1-1: Location Map in Genesee County ....1-1
Map 1-2: School District Map ....1-2
Map 2-1: Water District Map ....2-2
Map 2-2: Water Distribution System Map ....2-3
Map 2-3: Sanitary Sewer System Map ....2-6
Map 2-4: Street Classification Map ....2-8
Map 2-5: PASER Street Rating Map ....2-10
Map 2-6: Road Improvement Plan Map ....2-12
Map 2-7: Traffic Count Map ....2-13
Map 2-8: MTA Bus Route Map ....2-14
Map 2-9: Railroad Map ....2-16
Map 3-1: Wetland Areas in City of Burton ....3-2
Map 3-2: Potential Wetland Restoration in City of Burton ....3-3
Map 3-3: Potential Wetland Restoration Along I-475 ....3-4
Map 3-4: Potential Wetland Restoration Along Thread and Gilkey Creek ....3-5
Map 3-5: Potential Wetland Restoration Along I-69 ....3-6
Map 3-6: Flood Plain Area Along Vassar Road ....3-7
Map 3-7: Gilkey Creek Location in Flint River Watershed ....3-8
Map 4-1: Existing Land Use Map- 2016 ....4-3
Map 5-1: DDA District Exiting Land Uses Map ....5-1
Map 5-2: DDA District Exiting Land Uses Map ....5-2
Map 5-3: Parks and Recreation Master Plan Existing Recreation Facilities Map ....5-5
Map 5-4: Parks and Recreation Master Plan Proposed Pathway Map ....5-7
Map 5-5 : Neighboring Municipalities, 2010 ....5-8
Map 5-6 : City of Flint Land Use Plan, 2013 ....5-9
Map 5-7 : Flint Township Future Land Use Plan, 2009 ....5-10
Map 5-8: Grand Blanc Township Land Use Plan, 2010 ....5-11
Map 5-9: Davison Township Future Land Use Plan, 2003 ....5-12
Map 5-10: Richfield Township Future Land Use Plan, 2005 ....5-13
Map 5-11: Atlas Township Future Land Use Plan, 2009 ....5-14
Map 5-12: Mundy Township Future Land Use Plan, 2011 ....5-15
Map 5-13 : Genesee Township Land Use Plan, 1990 ....5-16

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Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

## Table of Tables

Table 1-1: Population Changes, 1970-2010 ..... 1-3
Table 1-2: Median Age, 1990-2010 ..... 1-4
Table 1-3: Household Types, 2010 ..... 1-6
Table 1-4: Education Attainment, 2014 ..... 1-7
Table 1-5: Number of Occupied Dwelling Units, 1990-2010 ..... 1-8
Table 1-6: Units in Structure*, 2014 ..... 1-9
Table 1-7: House Value, 2014 ..... 1-9
Table 1-8: Gross Rent, 2014 ..... 1-10
Table 1-9: Median Rent Values, 1990-2014 ..... 1-10
Table 1-10: Income, 2014 ..... 1-15
Table 1-11: Income Source, 2014 ..... 1-15
Table 1-12: Poverty Status, 2014 ..... 1-16
Table 5-1: Parks and Recreation Master Plan Accessibility Rating ..... 5-4

## Table of Figures

Figure 1-1 Some Municipalities Population Change, 1970-2010 ..... 1-3
Figure 1-2: Age Group Breakdown by Percentage, 2010 ..... 1-4
Figure 1-3: Race and Ethnic Breakdown by Percentage, 2010 ..... 1-5
Figure 1-4: Race and Ethnic Breakdown by Percentage, 2010 ..... 1-5
Figure 1-5: Average Household Size, 2000-2010 ..... 1-6
Figure 1-6 Education Attainment, 2014 ..... 1-7
Figure 1-7 Housing Tenure, 2010 ..... 1-8
Figure 1-8: Year Structure Built, 2014 ..... 1-11
Figure 1-9: Selected Monthly Owner Cost as a Percentage of Household Income, 2014 ..... 1-12
Figure 1-10: Gross Rent as a Percentage of Household Income, 2014 ..... 1-12
Figure 1-11: Occupation, 2014 ..... 1-13
Figure 1-12: Number of Vehicles Available to Households, 2014 ..... 1-17
Figure 4-1: City of Burton Land Use, 2014 ..... 4-2
Figure 5-1: Cover of DDA Visioning Plan and Guide book ..... 5-1
Figure 5-2: Collage of photos from DDA Visioning Plan and Guide Book. Pgs 3.4, 3.6, and 4.3 ..... 5-3
Figure 5-3: Cover of City of Burton Five Year Parks and Recreation Plan ..... 5-4
Figure 8-2 Parks and Recreation Commission Focus Group Discussion. ..... 8-4

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## Executive Summary

The rest of this section has yet to be written.--- Place Holder

DRAFT

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# Chapter 1. Community Description

## Community Profile

There are many different components of a community including history, county government, school district, and residents who live here. The community description chapter will go over the brief history of the City of Burton, Genesee County, school districts within the city, demographic information of population, housing, and economy.

### *Brief History of the City of Burton*

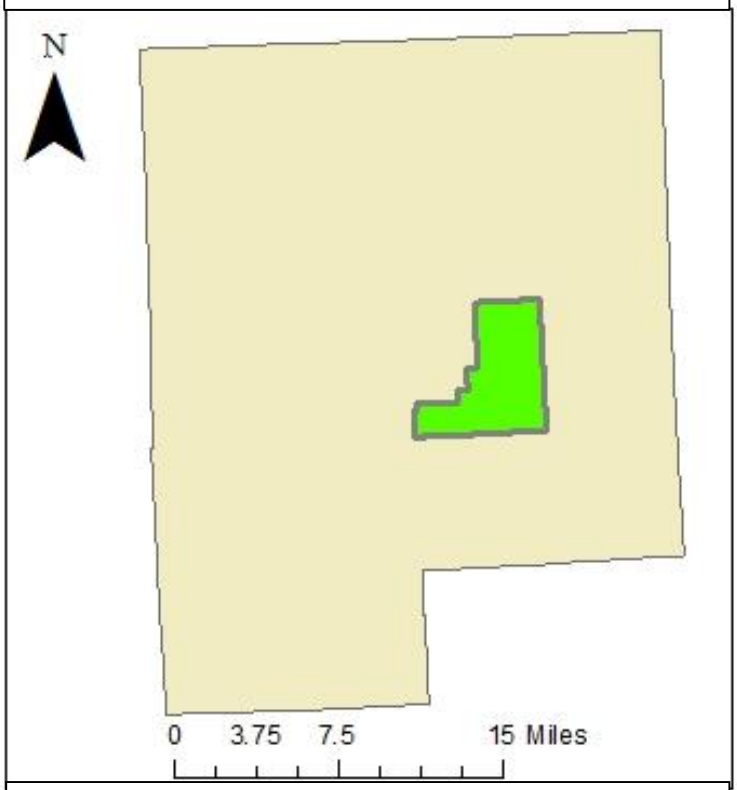
The City of Burton started as part of the Atherton Settlement that was established in 1835[1]. Atherton is the name of the brothers who travelled from New York to Michigan to farm[2]. In 1971, the township started to seek city status and on May 16, 1972 the township was incorporated as the City of Burton[3]. The farming township has now transformed from an agricultural community into a thriving suburban community.

### *Genesee County*

Genesee County was fully organized on April 4 in 1836. The county is located north of Livingston and Oakland County, east of Shiawassee County, south of Saginaw and Tuscola Counties, and west of Lapeer County. Genesee County spans 650 square miles. Within its jurisdiction there are thirteen (13) cities/villages and seventeen (17) townships. The largest city within the jurisdiction is the City of Flint.

The City of Burton is located in southeastern Genesee County (Map 1-1). Genesee County facilities and parks within the City of Burton include the County Health Department and two parks, For-Mar Nature Preservation and Arboretum and Davison Roadside Park. The city also houses the 67th District Court-Burton Division.

***Map 1-1: Location Map in Genesee County***




Source: Michigan Department of Technology, Management, and Budget. "Michigan Geographic Data Library." Using: ArcGIS (GIS software). Version 10.4. ROWE Professional Services Company, MI.

[1] Mona Ballge (2016) "About Our City." Print
[2] Wood Edwin O. (1916) "History of Genesee County, Michigan, Her People, Industries and Institutions." Michigan Historical Commission. http://www.usgennet.org/usa/mi/county/lapeer/gen/ch5/burton.html
[3] City of Burton. (2015) "About Our City." City of Burton. http://www.burtonmi.gov/residents/about_our_city/index.php



DRAFT

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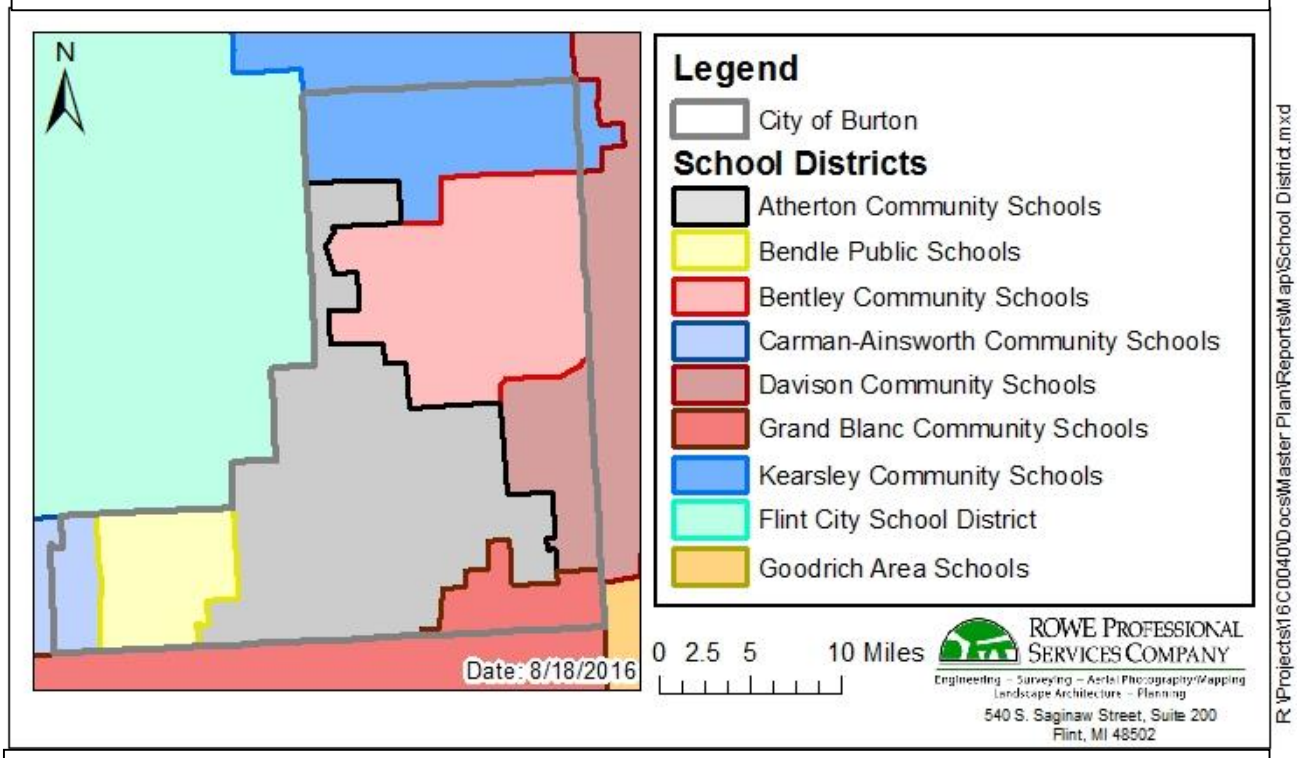
*School Districts*

The residents of the City of Burton has a variety of schools to choose from, both private or public within their boundaries. There are three school districts that reside completely within the city, Bentley Community Schools, Bendle Public Schools, and Atherton Community Schools. School districts that are partially within the city's limits include Carman-Ainsworth, Davison, Kearsley, and Grand Blanc. In addition, there are private schools and public schools that do not serve a prescribed area. There is a total of 17 different schools within the City of Burton varying in district, private or public, and grade levels offered. Shown in Map 1-2, you can see the different major school districts and schools throughout the districts.

***Map 1-2: School District Map***




Source: Michigan Department of Technology, Management, and Budget. "Michigan Geographic Data Library." Using: ArcGIS (GIS software). Version 10.4. ROWE Professional Services Company, MI.

Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

## City of Burton Master Plan – Preliminary Population Analysis

### *Population Analysis*

Population information is important to review when trying to understand a community. When considering population for a city, it must be kept in mind that residents of a city in Michigan are also residents of the county in which the city is located. This is reflected in the census data. The information collected includes population changes, age breakdown, median age, race and ethnic breakdown, household types, average household size, and education attainment.

The City of Burton's census population has declined peaked and then increased over 30 years before holding relatively steady over the period 2000 – 2010 shown in Table 1-1 and Figure 1-1. This compares with surrounding jurisdictions that have decreased (City of Flint and Davison Township) and increased Grand Blanc and Davison Township. The population change is very consistent with both Genesee County and the State of Michigan as a whole.

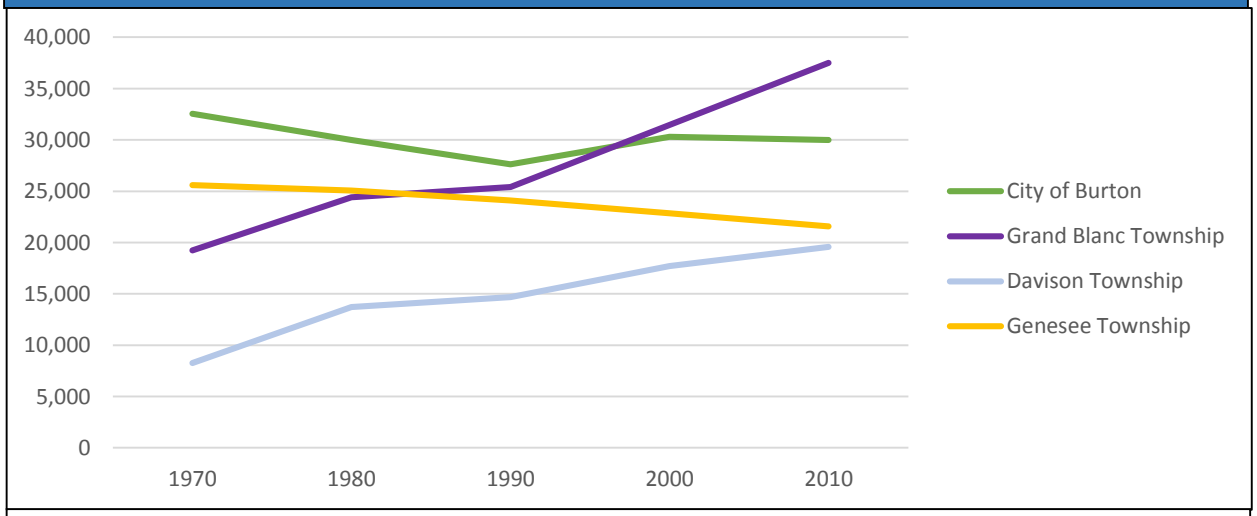
**Table 1-1: Population Changes, 1970-2010**

| 1970 -2010 | City of Burton | | City of Flint | | Grand Blanc Twp | | Davison Twp | | Genesee Twp | | Genesee County | | State of Michigan | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Year | Pop. | Chng. | Pop. | Chng. | Pop. | Chng. | Pop. | Chng. | Pop. | Chng. | Pop. | Chng. | Pop. | Chng. |
| 1970 | 32,540 | | 193,317 | | 19,229 | | 8,260 | | 25,589 | | 444,341 | | 8,875,083 | |
| 1980 | 29,976 | -8% | 159,611 | -17% | 24,413 | 27% | 13,708 | 66% | 25,065 | -2% | 450,449 | 1% | 9,262,078 | 4% |
| 1990 | 27,617 | -8% | 140,761 | -12% | 25,392 | 4% | 14,671 | 7% | 24,093 | -4% | 430,459 | -4% | 9,295,297 | 0% |
| 2000 | 30,308 | 10% | 124,943 | -11% | 31,450* | 24% | 17,722 | 21% | 22,837* | -5% | 436,141 | 1% | 9,938,444 | 7% |
| 2010 | 29,999 | -1% | 102,434 | -18% | 37,508 | 19% | 19,575 | 10% | 21,581 | -5% | 425,790 | -2% | 9,883,640 | -1% |

*Reference: U.S. Census Bureau*

Note: Burton Township in 1970 turned into City of Burton by 1980 and * number is an estimated value.

**Figure 1-1 Some Municipalities Population Change, 1970-2010**




*Reference: U.S. Census Bureau*



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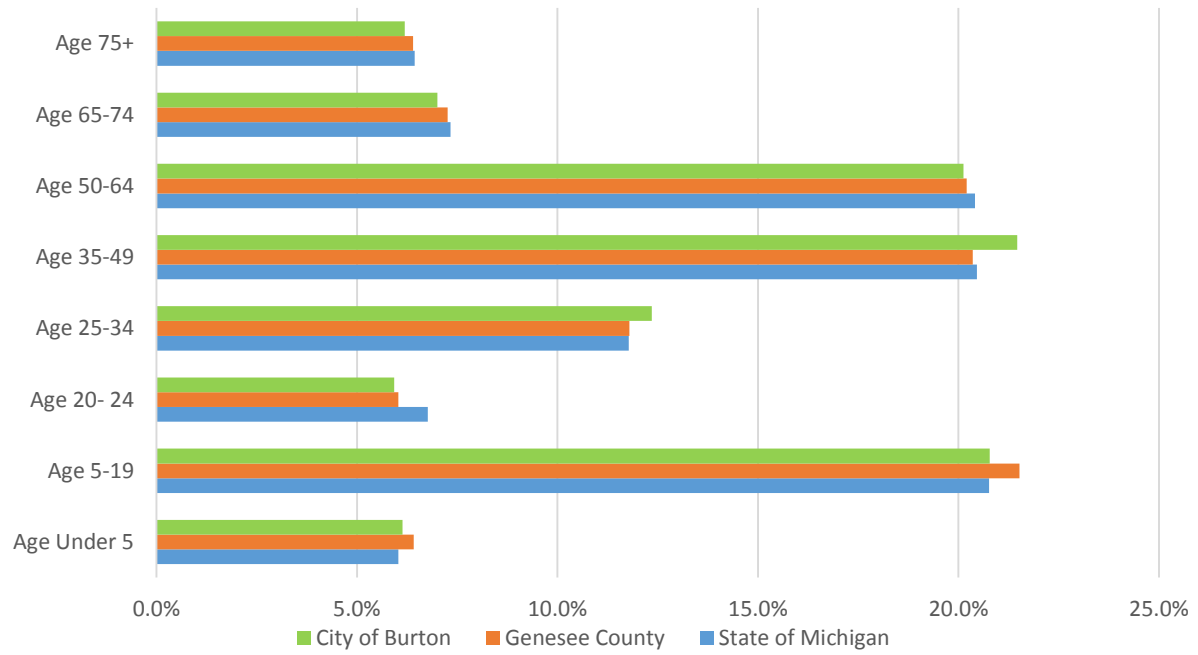
Figure 1-2 identifies the population by age group and compares the various age cohorts with the county and the state. The data shows that in 2010 the population in the city had a higher percentage of young to middle aged adults from 25-49. This is a higher percentage in both the household formation and the working years.

**Figure 1-2: Age Group Breakdown by Percentage, 2010**




*Reference: U.S. Census Bureau*

The median age in the City of Burton is generally in line with the county and state. It shows the general increase in age caused by the aging "baby-boom" generation. This trend is expected to continue unless the city is able to attract a number of younger persons into the community (Table 1-2).

**Table 1-2: Median Age, 1990-2010**

| Year | City of Burton | Genesee County | State of Michigan |
|---|---|---|---|
| 1990 | 32.7 | 32 | 32.6 |
| 2000 | 34.6 | 35.25 | 35.5 |
| 2010 | 38.6 | 38.5 | 38.9 |

*Reference: U.S. Census Bureau*
Note: The shaded box is an estimated number value.

Figure 1-3 and Figure 1-4, shows that the city of is more homogeneous racially than Genesee County or the State of Michigan as a whole. National and state-wide trends would predict that the city will become more racially diverse over the next two decades.





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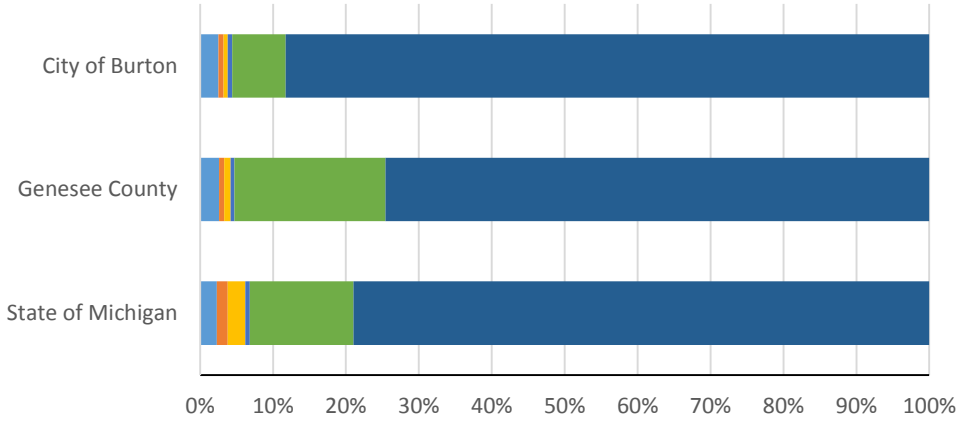
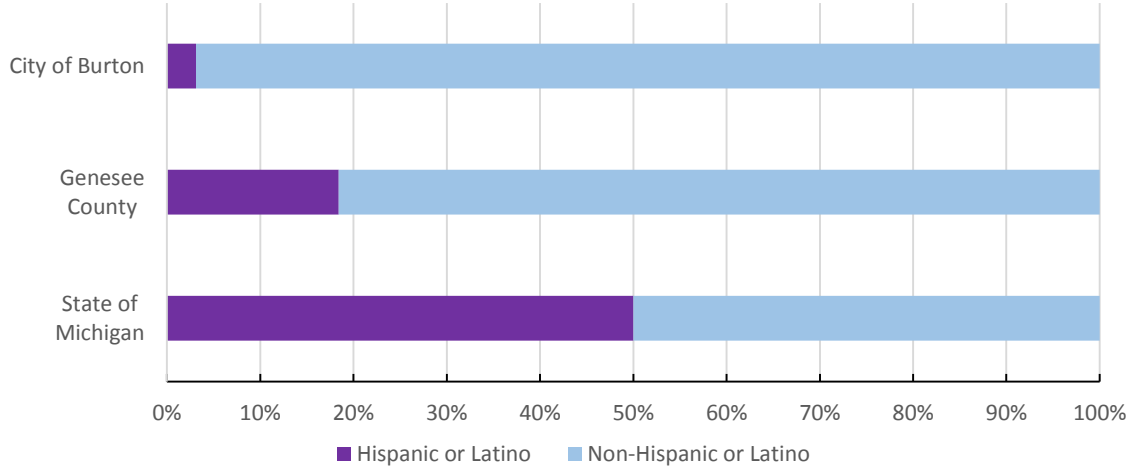
## Figure 1-4: Race and Ethnic Breakdown by Percentage, 2010




| | State of Michigan | Genesee County | City of Burton |
|---|---|---|---|
| Two or More Races | 2.3% | 2.6% | 2.5% |
| Some Other Race | 1.5% | 0.7% | 0.7% |
| Native Hawaiian and Other Pacific Islander | 0.0% | 0.0% | 0.0% |
| Asian | 2.4% | 0.9% | 0.6% |
| American Indian and Alaska Native | 0.6% | 0.5% | 0.6% |
| Black or African American | 14.2% | 20.7% | 7.3% |
| White | 78.9% | 74.5% | 88.1% |

*Reference: U.S. Census Bureau*

## Figure 1-3: Race and Ethnic Breakdown by Percentage, 2010




*Reference: U.S. Census Bureau*



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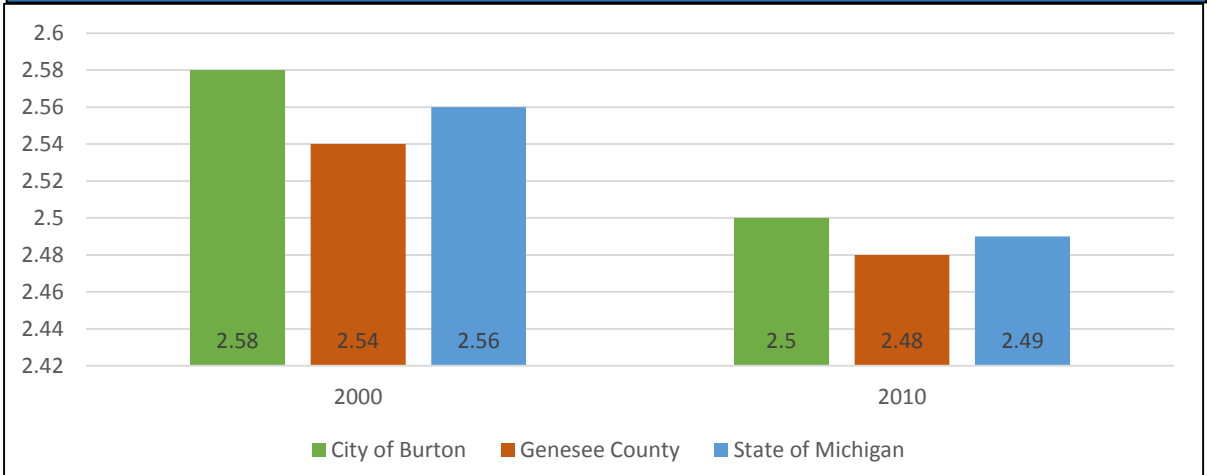
| Table 1-3: Household Types, 2010 | | | | | | |
|---|---|---|---|---|---|---|
| | City of Burton | | Genesee County | | State of Michigan | |
| | # | % | # | % | # | % |
| **Total households** | **11,964** | **100%** | **169,202** | **100%** | **3,872,508** | **100%** |
| *Family households (families)* | *8,041* | *67.2%* | *111,620* | *66.0%* | *2,554,073* | *66.0%* |
| With own children under 18 years | 3,500 | 29.3% | 49,511 | 29.3% | 1,106,735 | 28.6% |
| *Married-couple family* | *5,411* | *45.2%* | *73,337* | *43.3%* | *1,857,127* | *48.0%* |
| With own children under 18 years | 2,054 | 17.2% | 27,794 | 16.4% | 730,892 | 18.9% |
| *Female householder, no husband present* | *1,950* | *16.3%* | *29,048* | *17.2%* | *511,583* | *13.2%* |
| With own children under 18 years | 1,085 | 9.1% | 16,987 | 10.0% | 284,562 | 7.3% |
| *Male householder, no wife present* | *680* | *5.7%* | *9,235* | *5.5%* | *185,363* | *4.8%* |
| With own children under 18 years | 361 | 3.0% | 4,730 | 2.8% | 91,281 | 2.4% |
| *Nonfamily households* | *3,923* | *32.8%* | *57,582* | *34.0%* | *1,318,435* | *34.0%* |
| Householder living alone | 3,229 | 27.0% | 48,117 | 28.4% | 1,079,678 | 27.9% |
| Householder 65 years and over | 2,975 | 24.9% | 17,296 | 10.2% | 985,333 | 25.4% |
| *Reference: U.S. Census Bureau* | | | | | | |

Table 1-3 shows the breakdown of households by types. A household is one or more persons functioning as a household unit. It is different from a family by the fact that it includes individuals living alone and two or more unrelated people living together. The household composition in the city is similar to the county and state.

The average household size for the city, county, and state is similar as shown in Figure 1-5. Comparison with 2000 data shows a drop in household size. This is a national trend due to the aging population. As nuclear families age, single households split into several as the children reach adulthood and form new households. Increases in the rate of divorce over the past 50 years have also increased the number of households and caused a reduction in average household. A significant impact of this trend is that a population that does not increase may still require additional housing units. It also impacts the demand for smaller dwelling units.

**Figure 1-5: Average Household Size, 2000-2010**




*Reference: U.S. Census Bureau*



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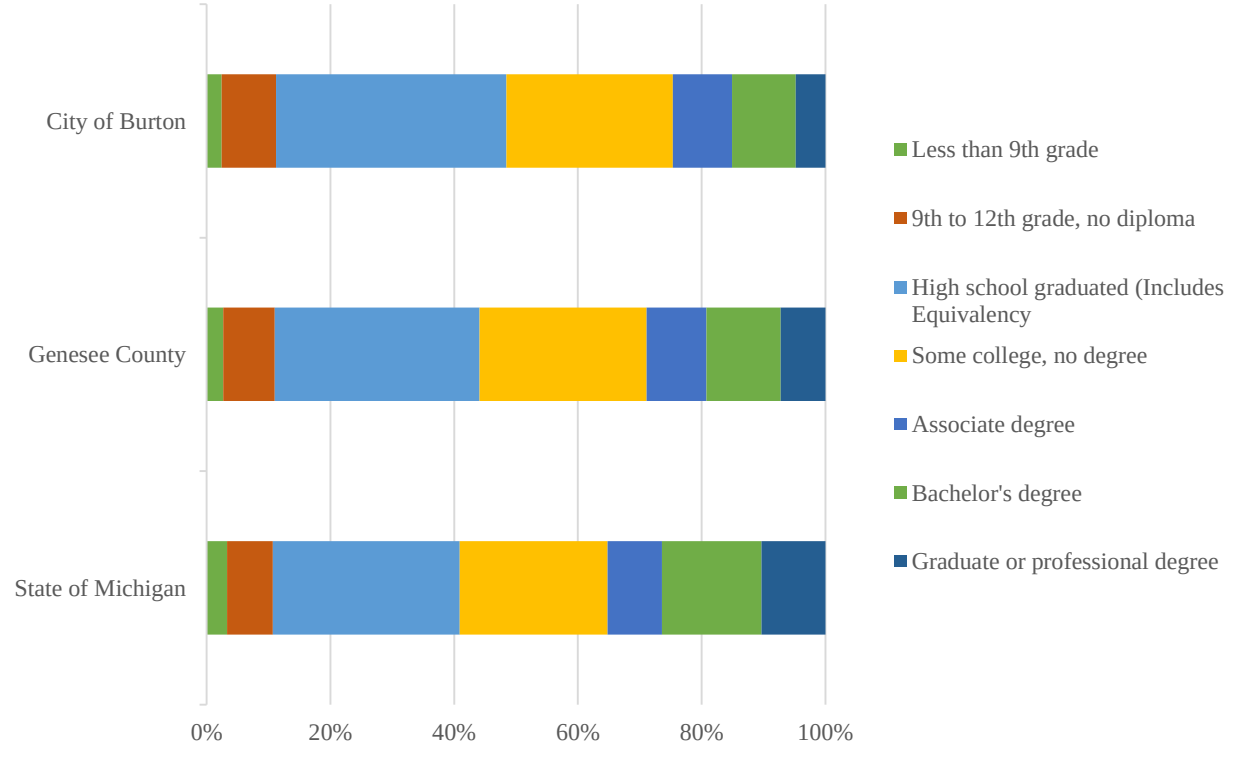
| Table 1-4: Education Attainment, 2014 | | | | | | |
|---|---|---|---|---|---|---|
| | City of Burton | | Genesee County | | State of Michigan | |
| | # | % | # | % | # | % |
| **Population 25 years and over** | 20,178 | 100% | 38,166 | 100% | 6,619,834 | 100% |
| Less than 9th grade | 484 | 2.4% | 1,030 | 2.7% | 218,455 | 3.3% |
| 9th to 12th grade, no diploma | 1,776 | 8.8% | 3,168 | 8.3% | 489,868 | 7.4% |
| High school graduate (includes equivalency) | 7,526 | 37.3% | 12,633 | 33.1% | 1,999,190 | 30.2% |
| Some college, no degree | 5,428 | 26.9% | 10,305 | 27.0% | 1,582,140 | 23.9% |
| Associate degree | 1,937 | 9.6% | 3,702 | 9.7% | 582,545 | 8.8% |
| Bachelor's degree | 2,078 | 10.3% | 4,580 | 12.0% | 1,065,793 | 16.1% |
| Graduate or professional degree | 969 | 4.8% | 2,748 | 7.2% | 681,843 | 10.3% |
| *Reference: American Community Survey, 2014* | | | | | | |

The city has a lower percentage of adults with bachelor or higher college degrees than the county or the city shown in table 1-4 and figure 1-6. It has about the same percentage of adults without a high school degree or equivalency, but a higher proportion of adults with a high school degree but no college.

**Figure 1-6 Education Attainment, 2014**




*Reference: Estimates from 2010-2014 American Community Survey*



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*Housing Analysis*

Part of what attracts people to live in the community the type of housing that is located within the municipality. The characteristics measured by the census include information regarding the residents (tenure and affordability) as well as information about the structures themselves (age, value, type of structure, etc.)

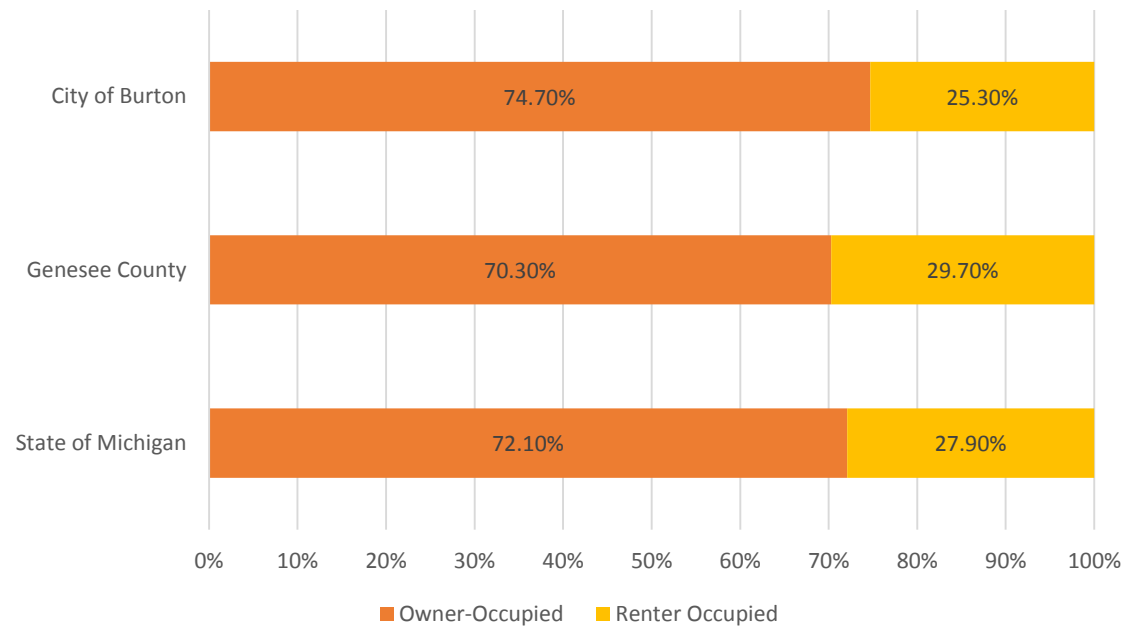
**Table 1-5: Number of Occupied Dwelling Units, 1990-2010**

| Total Housing Units* | City of Burton | | Genesee County | | State of Michigan | |
|---|---|---|---|---|---|---|
| | # | % Change | # | % Change | # | % Change |
| 1990 | 9,869 | | 128,402 | | 3,419,331 | |
| 2000 | 12,348 | 25.1% | 169,825 | 32.3% | 3,785,661 | 10.7% |
| 2010 | 11,964 | -3.1% | 169,202 | -0.4% | 3,872,508 | 2.3% |

*Reference: U.S. Census Bureau*

Table 1-5 shows the change in the number of occupied dwelling units. It showed a decrease of 3.1% in the number of occupied dwellings. This compares with a more modest decrease in the county as a whole and a small increase for the state.

**Figure 1-7 Housing Tenure, 2010**




*Reference: U.S. Census Bureau*

Table 1-6 identifies the breakdown of renters vs. homeowners in the city. It is not unusual for an urban area to have a higher percentage of renters than mostly rural areas. However, the City of Burton has only a slightly greater number of owner occupied residences.



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| Table 1-6: Units in Structure*, 2014 | | | | | | |
|---|---|---|---|---|---|---|
| | City of Burton | | Genesee County | | State of Michigan | |
| | # | % | # | % | # | % |
| Total housing units | 12,951 | 100.0% | 191,447 | 100.0% | 4,532,719 | 100.0% |
| 1-unit, detached | 10,550 | 81.5% | 139,869 | 73.1% | 3,262,082 | 72.0% |
| 1-unit, attached | 134 | 1.0% | 8,316 | 4.3% | 211,262 | 4.7% |
| 2 units | 107 | 0.8% | 3,241 | 1.7% | 116,964 | 2.6% |
| 3 or 4 units | 180 | 1.4% | 4,541 | 2.4% | 116,039 | 2.6% |
| 5 to 9 units | 213 | 1.6% | 7,512 | 3.9% | 190,503 | 4.2% |
| 10 or 19 units | 265 | 2.0% | 8,079 | 4.2% | 163,537 | 3.6% |
| 20 or more units | 753 | 5.8% | 9,082 | 4.7% | 225,494 | 5.0% |
| Mobile home | 749 | 5.8% | 10,799 | 5.6% | 245,882 | 5.4% |
| Boat, RV, van, etc | 0 | 0.0% | 8 | 0.0% | 956 | 0.0% |
| Note: *Occupied Housing Units.<br>*Reference: Estimates from 2010-2014 American Community Survey* | | | | | | |

This despite the fact, as shown in Table 1-6, it has a much higher proportion of single family detached homes at 81.5% vs 73.1% for the county and 72% for the State of Michigan.

Table 1-7 compares housing value in the city versus the county and state. It shows that the median value of an owner occupies home in the city is approximately 58% of the that of state as a whole and 75% of the county

| Table 1-7: House Value, 2014 | | | | | | |
|---|---|---|---|---|---|---|
| | City of Burton | | Genesee County | | State of Michigan | |
| | # | % | # | % | # | % |
| Specified owner-occupied units | 8,527 | 100.0% | 115,167 | 100.0% | 2,738,012 | 100.0% |
| Less than $50,000 | 2,724 | 31.9% | 30,466 | 26.5% | 431,825 | 15.8% |
| $50,000 to $99,999 | 3,442 | 40.4% | 34,666 | 30.1% | 681,414 | 24.9% |
| $100,000 to $149,999 | 1,503 | 17.6% | 24,122 | 20.9% | 551,567 | 20.1% |
| $150,000 to $199,999 | 662 | 7.8% | 13,390 | 11.6% | 439,220 | 16.0% |
| $200,000 to $299,999 | 157 | 1.8% | 8,447 | 7.3% | 371,874 | 13.6% |
| $300,000 to $499,999 | 27 | 0.3% | 2,641 | 2.3% | 188,963 | 6.9% |
| $500,000 to $999,999 | 12 | 0.1% | 909 | 0.8% | 57,303 | 2.1% |
| $1,000,000 or more | 0 | 0.0% | 526 | 0.5% | 15,846 | 0.6% |
| Median (dollars) | $69,500 | | $88,300 | | $120,200 | |
| *Reference: Estimated from 2010 - 2014 American Community Survey* | | | | | | |

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Table 1-8 shows that the disparity has grown over the past 30 years, and particularly since 2010.

| Table 13: Median House Values, 1990-2014 | | | | | | |
|---|---|---|---|---|---|---|
| Total Housing Units | City of Burton | | Genesee County | | State of Michigan | |
| | $ | % Change | $ | % Change | $ | % Change |
| 1990 | $44,400 | | $42,700 | | $ 60,600 | |
| 2000 | $84,500 | 90.3% | $95,000 | 122.5% | $ 115,600 | 90.8% |
| 2010 | $100,600 | 19.1% | $118,000 | 24.2% | $144,200 | 24.7% |
| 2014* | $69,500 | -30.9% | $88,300 | -25.2% | $120,200 | -16.6% |
| *Reference: Estimated from 2009 - 2014 American Community Survey* | | | | | | |

Median rents on the other were higher than county medians and only 3% less than the state median income. Table 1-8 shows that the median rents increased 90% from 1990 to 2014 while the median value of an owner occupied home increased by only 57%. Most of this disparity occurred since 2014 when the median value of homes dropped and the median rent increased by 9.5%.

| Table 1-8: Gross Rent, 2014 | | | | | | |
|---|---|---|---|---|---|---|
| | City of Burton | | Genesee County | | State of Michigan | |
| | # | % | # | % | # | % |
| Specified renter-occupied units | 2,901 | 100.0% | 47,823 | 100.0% | 1,028,835 | 100.0% |
| Less than $200 | 0 | 0.0% | 853 | 1.8% | 19,182 | 1.9% |
| $200 to $299 | 226 | 7.8% | 1,748 | 3.7% | 39,926 | 3.9% |
| $300 to $499 | 338 | 11.7% | 6,216 | 13.0% | 95,876 | 9.3% |
| $500 to $749 | 850 | 29.3% | 17,528 | 36.7% | 316,871 | 30.8% |
| $750 to $999 | 908 | 31.3% | 13,433 | 28.1% | 288,644 | 28.1% |
| $1,000 to $1,499 | 464 | 16.0% | 6,611 | 13.8% | 207,491 | 20.2% |
| $1,500 or more | 115 | 4.0% | 1,434 | 3.0% | 60,845 | 5.9% |
| No rent paid | 215 | 7.4% | 2,972 | 6.2% | 61,033 | 5.9% |
| Median (dollars) | $759 | | $718 | | $780 | |
| *Reference: Estimated from 2010 - 2014 American Community Survey* | | | | | | |

| Table 1-9: Median Rent Values, 1990-2014 | | | | | | |
|---|---|---|---|---|---|---|
| Total Housing Units | City of Burton | | Genesee County | | State of Michigan | |
| | $ | % Change | $ | % Change | $ | % Change |
| 1990 | $399 | | $406 | | $341 | |
| 2000** | $476 | 19.3% | $507 | 24.9% | $546 | 60.1% |
| 2010 | $693 | 45.6% | $662 | 30.6% | $723 | 32.4% |
| 2014* | $759 | 9.5% | $718 | 8.5% | $780 | 7.9% |
| Note:** Information not available - estimated value<br>*Reference: U.S. Census Bureau and *Estimated from 2010 - 2014 American Community Survey* | | | | | | |



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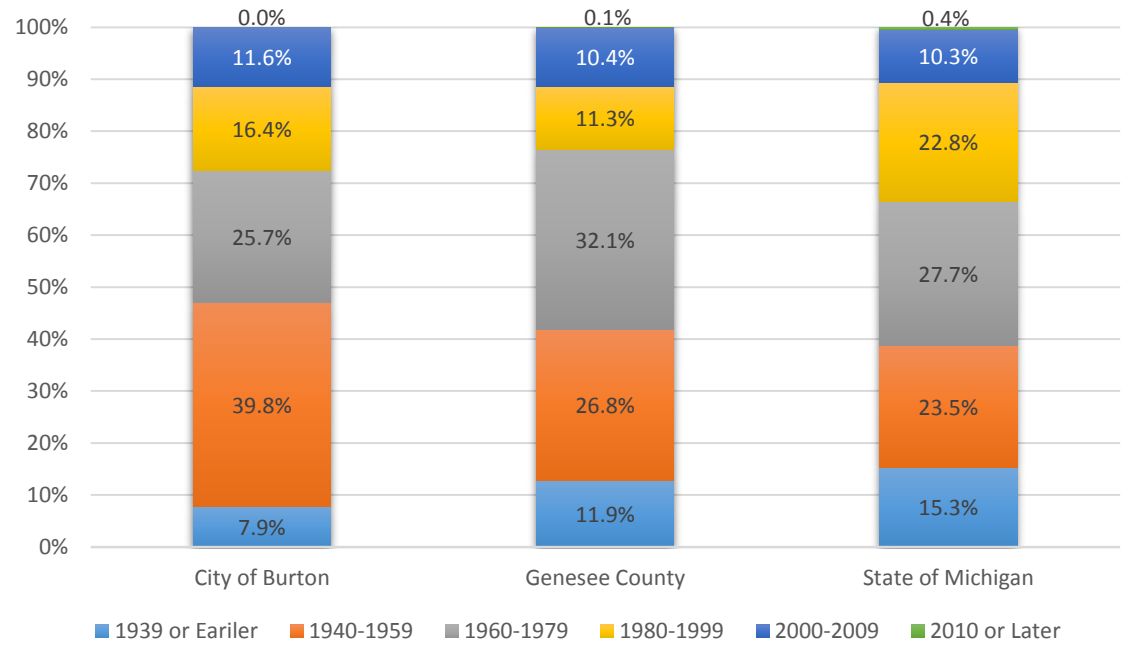
Figure 1-8 shows the last significant increase in housing construction occurred in the city from 2000 to 2010. Over 11% of the housing stock as of 2014 was built over that period of time, a proportion equivalent to the county and the state. However, the table also shows that 47.7% of the homes were built before 1960 and so are over 50 years old. This compares with 38.7% for the county and 38.8% for the county.

**Figure 1-8: Year Structure Built, 2014**




*Reference: Estimates from 2010-2014 American Community Survey*

Tables 1-9 and 1-10 identify the affordability of housing in a community by comparing housing costs with income. For owner-occupied homes, "selected monthly owner costs" include payments for mortgages or similar debts on the property (including payments for second mortgages, home equity loans, and other junior mortgages); real estate taxes; insurance on the property; utilities (electricity, gas, and water and sewer); and fuels. Where appropriate, it also includes the monthly condominium fees or mobile home costs. The "gross rent" calculated for non-homeowners includes the contract rent plus the estimated average monthly cost of utilities (electricity, gas, water, and sewer) and fuels, if these are paid for by the renter.

A general rule of thumb is that a household should not pay more than one-third of its income on these housing costs. Table 1-9 shows that almost two thirds of homeowners (64.2%) pay less than 30% of their income for housing costs, although the county (65.7%) and the state (69.0%) do slightly better. Given the greater increase in gross rents, it is not surprising that a higher percentage of renters are paying more than 30% of their income on rent shown in Table 1-10. Only 42.9% of the renters were paying less than 30% of their income compared with 40.8% for the county and 46.0% for the state.



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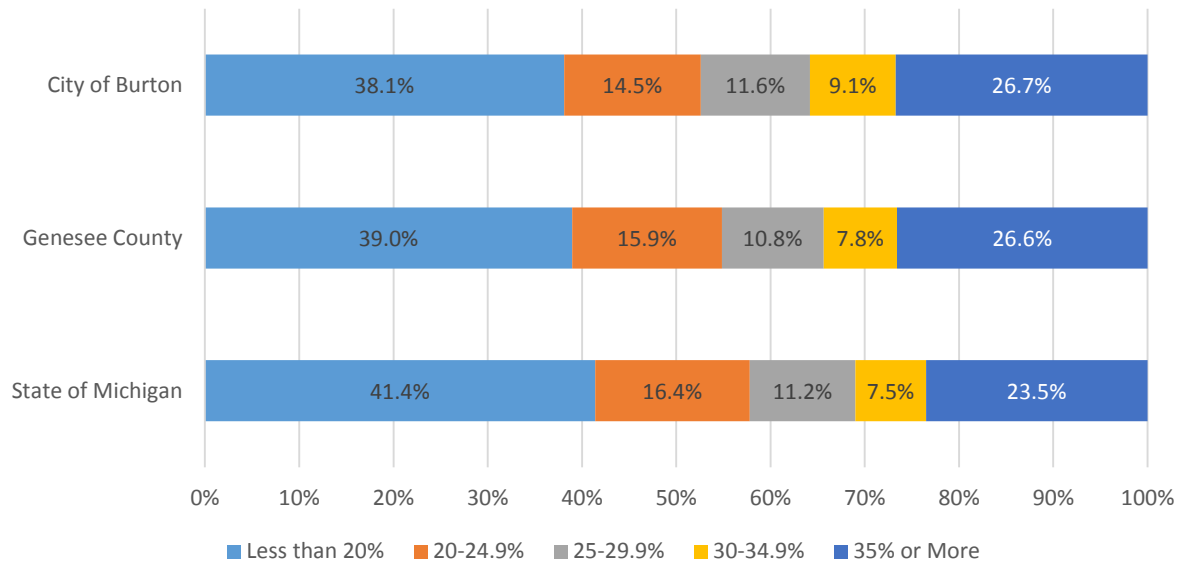
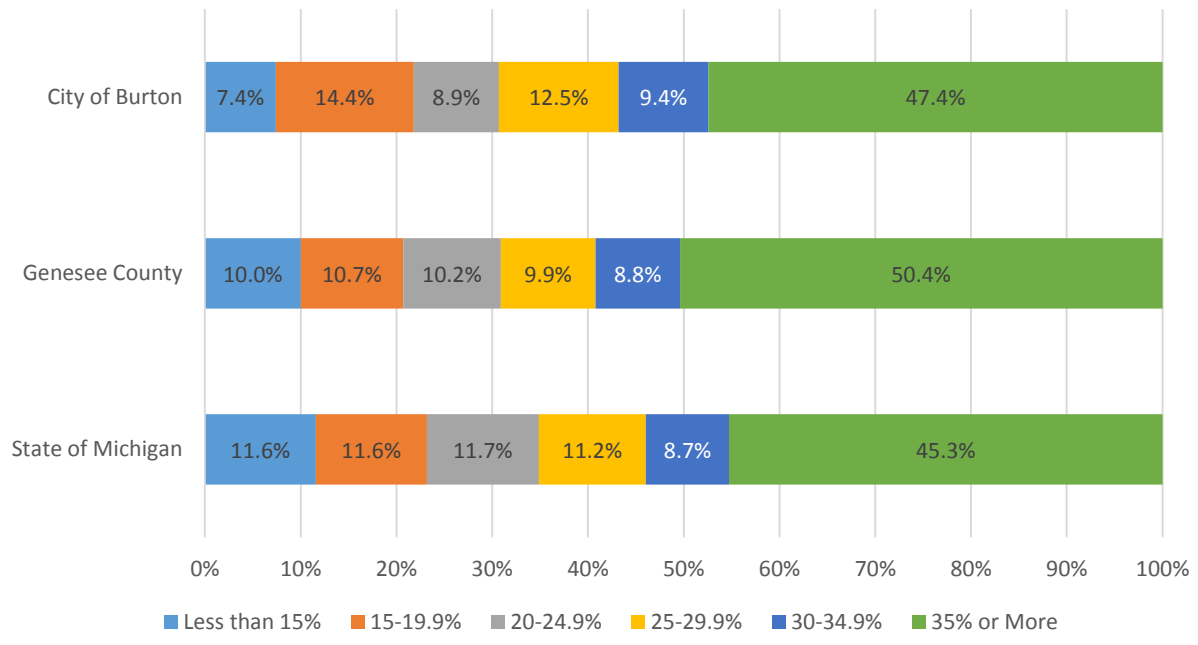
**Figure 1-9: Selected Monthly Owner Cost as a Percentage of Household Income, 2014**




*Reference: Estimates from 2010-2014 American Community Survey*

**Figure 1-10: Gross Rent as a Percentage of Household Income, 2014**




*Reference: Estimates from 2010-2014 American Community Survey*

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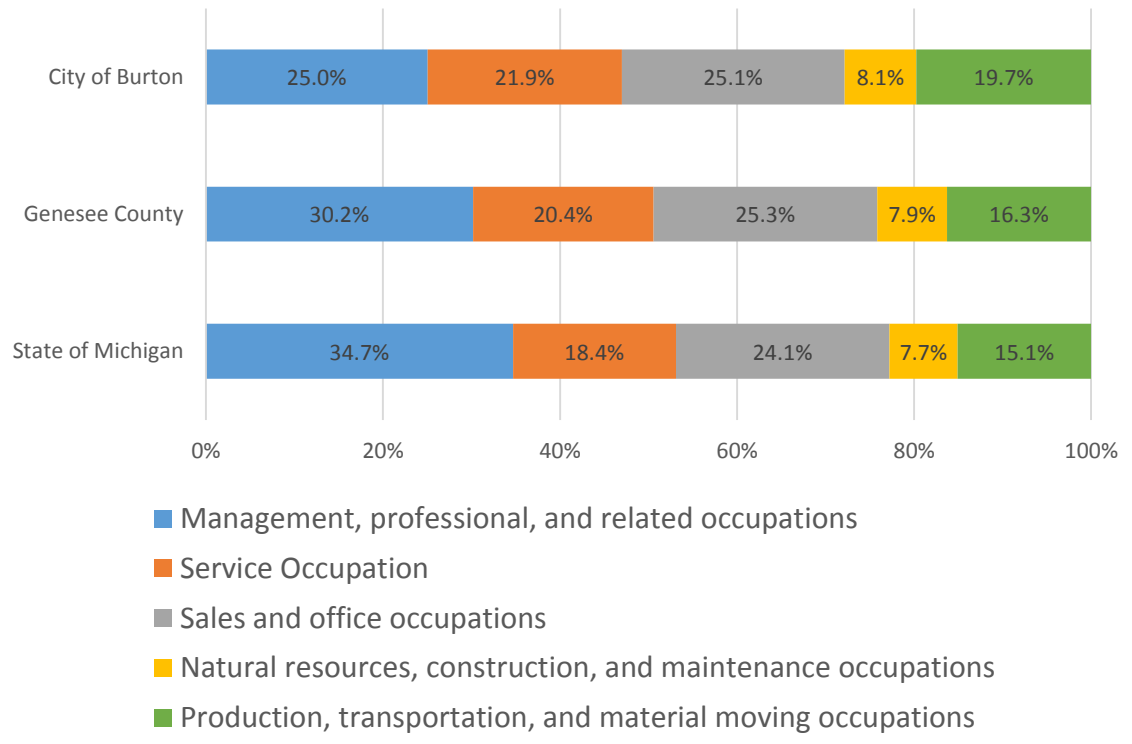
### *Economic Analysis*

Economic information is crucial to evaluate the local economy and help to see how diverse or resilient the community is. Demographic information evaluated from the Census Bureau include the 2010 census and 2010-2014 American Community Survey. The categories evaluated include occupation, industry, class of worker, income, income source, poverty status, and vehicle available.

The six occupations listed in Table 1-11 are generalization of 509 specific occupational categories for employed people arranged into 23 major occupational groups by the Bureau of the Census. The table shows that the percentage of each occupation varies between the county, township, and city. It does not include persons in the military or under 16 years of age. It shows that the city has a lower percentage of persons employed in management, professional and related occupations and a slightly higher percentage in the other 5 categories.

**Figure 1-11: Occupation, 2014**




*Reference: Estimates from 2010-2014 American Community Survey*

The industry classification system used during Census 2000 was developed for the census and consists of 265 categories for employed people, classified into 14 major industry groups. Table 1-11 shows estimated numbers from 2014 based on data gathered from 2010 to 2014. From 1940 through 1990, the industrial classification has been based on the Standard Industrial Classification (SIC) Manual. The 2000 Census classification was developed from the 1997 North American Industry Classification System (NAICS) published by the Office of Management and Budget. This change in classification system makes comparison of data prior to 2000 with date since 2000 difficult.



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The primary industries that the residents of the city were engaged in the year 2014 were Education. Health and Social Services; Manufacturing and Retail Trade. These are the same for the county and the state although the portion they make of the total labor force in the city Is slightly less than the county or state.

**Table 20: Industry, 2014**

| INDUSTRY | City of Burton | | Genesee County | | State of Michigan | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| Employed civilian population 16 years and over | 11,856 | 100.0% | 157,974 | 100.0% | 4,293,574 | 100.0% |
| Agriculture, forestry, fishing and hunting, and mining | 41 | 0.3% | 837 | 0.5% | 56,755 | 1.3% |
| Construction | 476 | 4.0% | 7,774 | 4.9% | 204,227 | 4.8% |
| Manufacturing | 1,820 | 15.4% | 23,770 | 15.0% | 746,413 | 17.4% |
| Wholesale trade | 451 | 3.8% | 3,895 | 2.5% | 105,437 | 2.5% |
| Retail trade | 1,719 | 14.5% | 21,411 | 13.6% | 491,344 | 11.4% |
| Transportation and warehousing, and utilities | 515 | 4.3% | 6,871 | 4.3% | 176,791 | 4.1% |
| Information | 57 | 0.5% | 2,221 | 1.4% | 68,697 | 1.6% |
| Finance, insurance, real estate, and rental and leasing | 470 | 4.0% | 7,560 | 4.8% | 236,416 | 5.5% |
| Professional, scientific, management, administrative, and waste management services | 926 | 7.8% | 12,887 | 8.2% | 398,271 | 9.3% |
| Educational, health and social services | 2,684 | 22.6% | 41,598 | 26.3% | 1,036,163 | 24.1% |
| Arts, entertainment, recreation, accommodation and food services | 1,420 | 12.0% | 15,119 | 9.6% | 406,413 | 9.5% |
| Other services (except public administration) | 907 | 7.7% | 8,180 | 5.2% | 206,631 | 4.8% |
| Public administration | 370 | 3.1% | 5,851 | 3.7% | 160,016 | 3.7% |
| *Reference: Estimates from 2009-2014 American Community Survey* | | | | | | |

The data in Table 1-12 shows the breakdown of workers based on the ownership of the employing organization. It shows that in 2014, the percentage of persons employed by the government was lower than the county or state as a whole.

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Tables 1-12 and 1-13 deal with annual household income estimated in 2014. Table 1-12 shows that the median income in city is actually higher than the county as a whole, but 86% of the state median. Table 1-13 shows that 69.3% of the households have income from earnings, compared with 66.8% for the county and 73.6% for the state. The table shows that the percentage of Burton's residents that have non-earnings types of income such as retirement and social security are slightly lower than the county and slightly higher than the state.

**Table 1-10: Income, 2014**

| INCOME IN 2014* | City of Burton | | Genesee County | | State of Michigan | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| **Households** | 11,643 | 100.0% | 165,962 | 100.0% | 3,827,880 | 100.0% |
| Less than $10,000 | 1,056 | 9.1% | 17,344 | 10.5% | 308,023 | 8.0% |
| $10,000 to $14,999 | 863 | 7.4% | 10,745 | 6.5% | 211,941 | 5.5% |
| $15,000 to $24,999 | 1,440 | 12.4% | 21,164 | 12.8% | 446,084 | 11.7% |
| $25,000 to $34,999 | 1,445 | 12.4% | 20,791 | 12.5% | 424,007 | 11.1% |
| $35,000 to $49,999 | 2,026 | 17.4% | 25,465 | 15.3% | 553,748 | 14.5% |
| $50,000 to $74,999 | 2,389 | 20.5% | 30,202 | 18.2% | 707,412 | 18.5% |
| $75,000 to $99,999 | 1,098 | 9.4% | 17,515 | 10.6% | 456,176 | 11.9% |
| $100,000 to $149,999 | 1,000 | 8.6% | 15,220 | 9.2% | 445,647 | 11.6% |
| $150,000 to $199,999 | 163 | 1.4% | 4,682 | 2.8% | 150,246 | 3.9% |
| $200,000 or more | 163 | 1.4% | 2,834 | 1.7% | 124,596 | 3.3% |
| Median household income (dollars) | $42,002.00 | | $ 41,879.00 | | $49,087.00 | |

** Includes benefits (in 2014 inflation-adjusted dollars*
*Reference: Estimates from 2010-2014 American Community Survey*

**Table 1-11: Income Source, 2014**

| INCOME SOURCE IN 2010 | City of Burton | | Genesee County | | State of Michigan | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| **Households** | 11,643 | 100.0% | 165,962 | 100.0% | 3,827,880 | 100.0% |
| With earnings | 8,067 | 69.3% | 110,882 | 66.8% | 2,815,773 | 73.6% |
| Mean earnings (dollars) | $52,733.00 | | $57,151.00 | | $67,764.00 | |
| With Social Security income | 4,126 | 35.4% | 59,110 | 35.6% | 1,264,143 | 33.0% |
| Mean Social Security income (dollars) | $17,960.00 | | $18,526.00 | | $18,606.00 | |
| With Supplemental Security Income | 853 | 7.3% | 13,165 | 7.9% | 231,867 | 6.1% |
| Mean Supplemental Security Income (dollars) | $9,786.00 | | $9,705.00 | | $9,704.00 | |
| With public assistance income | 590 | 5.1% | 9,586 | 5.8% | 141,242 | 3.7% |
| Mean public assistance income (dollars) | $2,924.00 | | $3,453.00 | | $3,227.00 | |
| With retirement income | 3,033 | 26.0% | 47,678 | 28.7% | 871,667 | 22.8% |
| Mean retirement income (dollars) | $24,274.00 | | $22,905.00 | | $21,940.00 | |

*Reference: Estimates from 2010-2014 American Community Survey*

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Data in Table 1-14 shows the poverty status of families and individuals in the city, county and state. It follows the same pattern as the data on income and income source. The city's poverty rate is slightly lower than the county and slightly higher than the state. The exception is for families with minor children, where the city's rate is slightly higher than both the county and state.

**Table 1-12: Poverty Status, 2014**

| POVERTY STATUS IN 2014 (below poverty level) | City of Burton | | Genesee County | | State of Michigan | |
|---|---|---|---|---|---|---|
| | # | % | # | % | # | % |
| ***Families*** | 8041 | | 111620 | | 2554073 | |
| Percent below poverty level | 1270 | 15.8% | 18864 | 16.9% | 309043 | 12.1% |
| With related children under 18 years | 3500 | | 49511 | | 1106735 | |
| Percent below poverty level | 942 | 26.9% | 13913 | 28.1% | 222454 | 20.1% |
| With related children under 5 years | N/A | | N/A | | | |
| Percent below poverty level | | 33.8% | | 33.6% | 0 | 23.6% |
| | | | | | | |
| Families with female householder, no husband present | 1950 | | 29048 | | 511583 | |
| Percent below poverty level | 741 | 38.0% | 11735 | 40.4% | 174961 | 34.2% |
| With related children under 18 years | 1085 | | 16987 | | 284562 | |
| Percent below poverty level | 601 | 55.4% | 8935 | 52.6% | 128907 | 45.3% |
| With related children under 5 years | NA | | NA | | NA | |
| Percent below poverty level | | 73.6% | | 64.9% | | 54.2% |
| | | | | | | |
| ***All people as individuals*** | 29999 | | 425790 | | 9883640 | |
| Percent below poverty level | 5970 | 19.9% | 90267 | 21.2% | 1670335 | 16.9% |
| 18 years and over | 22799 | | 319211 | | 7539572 | |
| Percent below poverty level | 3990 | 17.5% | 56820 | 17.8% | 1115857 | 14.8% |
| 65 years and over | 3961 | | 58189 | | 1361530 | |
| Percent below poverty level | 384 | 9.7% | 4190 | 7.2% | 110284 | 8.1% |
| Related children under 18 years | 7200 | | 106579 | | 2344068 | |
| Percent below poverty level | 2059 | 28.6% | 33786 | 31.7% | 555544 | 23.7% |
| Related children 5 to 17 years | NA | | NA | | NA | |
| Percent below poverty level | | 26.9% | | 29.3% | | 21.7% |
| Unrelated individuals 15 years and over | NA | | NA | | NA | |
| Percent below poverty level | | 33.9% | | 31.6% | | 29.6% |

*Reference: Estimates from 2010-2014 American Community Survey*

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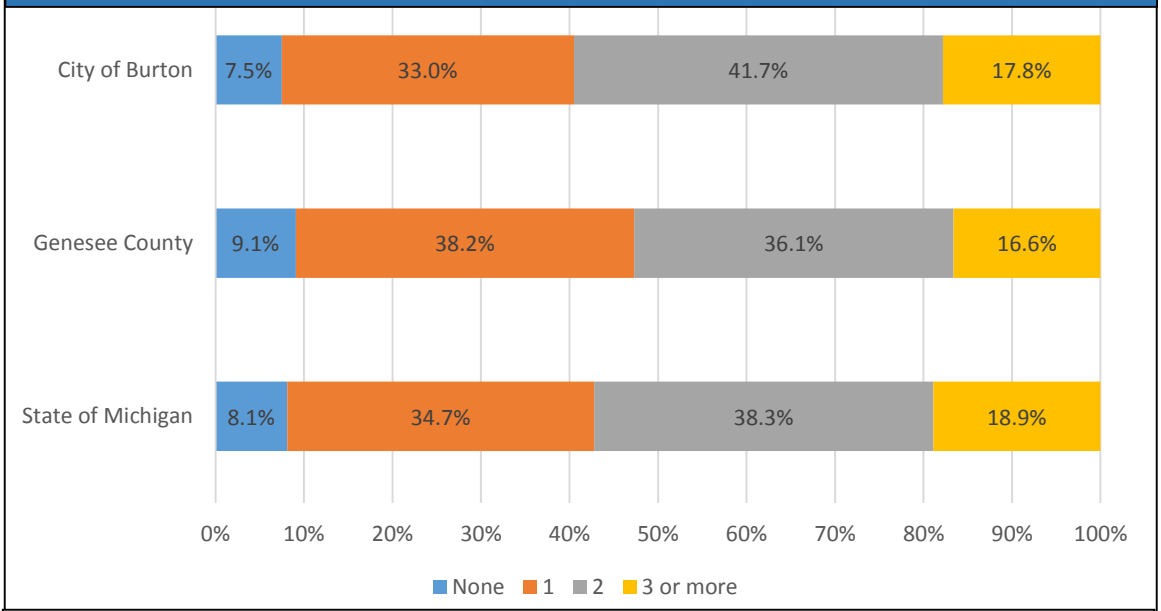
Table 1-13 shows that 7.5% of city residents do not have access to a vehicle. This is a lower percentage than the state and county. While some portions of the city are served by the Mass Transit Authority's fixed routes and other areas are served by the "My Ride" system. The lack of access to a vehicle can limit the ability of residents to maintain a job and get access to necessary health services.

**Figure 1-12: Number of Vehicles Available to Households, 2014**




*Reference: Estimates from 2010-2014 American Community Survey*

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# Chapter 2. Infrastructure

## Utilities

### *Water System*

The City of Burton owns and operates a public water distribution system that is divided into four pressure districts, including North, Tower, Southeast, and Southwest (Map 2-1). The public water system serves approximately 6,568 accounts - the remaining 55% of the population is serviced by private wells, many of which are located south of I-69, north of Bristol Road, east of Center Road, and west of Vassar Road. The current system consists of one elevated storage tank and over 120 miles of distribution main. The system provides potable water, commercial and industrial process-use water, and firefighting water for the city.

The City was successful in obtaining funds through the Drinking Water Revolving Fund (DWRF) program in 2013. The proposed improvements to the existing water distribution system were broken into five phases. Phase 1 and 2 have been completed. Phase 3 is currently under construction and will be completed in October 2016.

### Existing Facilities

#### Water Source

The City of Burton is a wholesale customer of the Genesee County Drain Commissioner Water and Waste Services (GCDC-WWS). GCDC-WWS purchases treated water from the Great Lakes Water Authority (GLWA), previously the Detroit Water and Sewerage Department (DWSD). The treated water is supplied to the county via a 72-inch transmission main – water is then supplied to the city through three city owned master meters, one of which is reserved for emergency conditions. The GCDC-WWS maintains a regional water system; water that bypasses the city in transit to other communities is monitored by county owned and operated meters.

#### Water Storage

The city owns and operates one elevated storage tank. Located at the northeast corner of S. Saginaw Road and Bristol Road, the 400,000 gallon elevated storage tank is connected to the system via a twelve-inch water main and was constructed in 1998 in order to replace the 1937 elevated storage tank. The city recently completed Supervisory Control and Data Acquisition System(SCADA) improvements as well as the improvements recommended in a 2010 report by Dixon Engineering Inc. In order to reduce the frequency of water main breaks, the elevated water tank is currently operated at lower than design levels, thus hindering the optimum utilization of the design reliability built into the tank sizing. The elevated water tank will continue to operate at a lower capacity until all phases of the DWRF are complete.

#### Booster Pump Stations

The GCDC-WWS owns and operates two booster pump stations within the city's water system. The Center Booster Pump Station provides water to the Tower, Southeast, and Southwest pressure districts. The South Center Booster Pump Station provides water to Southeast pressure district.

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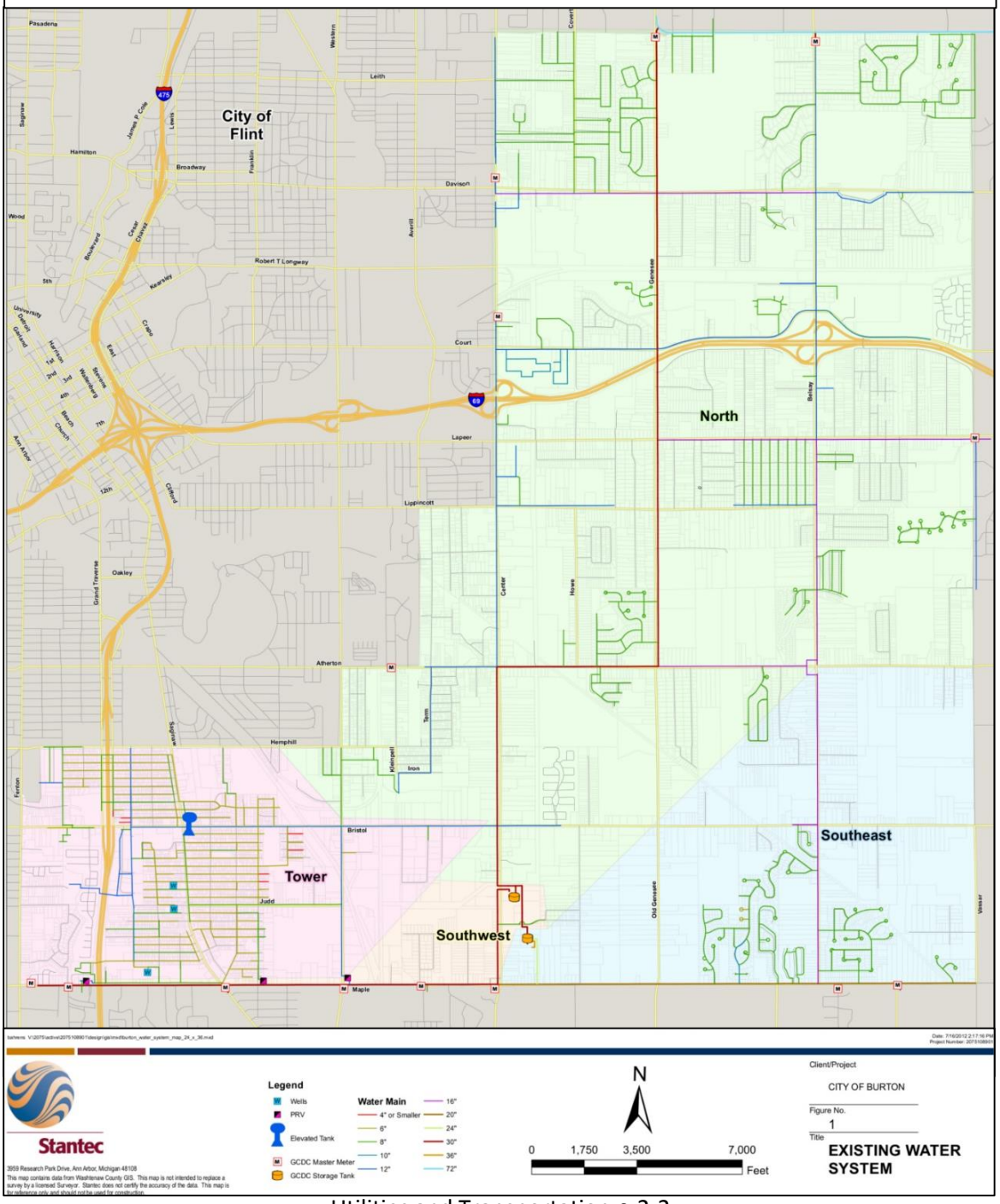
### Valves

Four pressure reducing valves (PRVs) are located within the City of Burton's Water System. Installed in 1990, PRVs #1 - #3 are owned and operated by the city and are located at the intersections of Maplebrook Lane and E. Maple Avenue, Fern Avenue and E. Maple Avenue, and Dort Highway and E. Maple Avenue consecutively. PRV #2 was replaced in 2012 and PRV's #1 and #3 followed in 2014 as a part of the DWRF projects. PRV #4 is owned and operated by the GCDS-WWS. The city owned PRVs serve to reduce pressure to the Tower pressure district while the GCDC-WWS owned PRV reduces pressure to the Southeast pressure district.

*Map 2-1: Water District Map*



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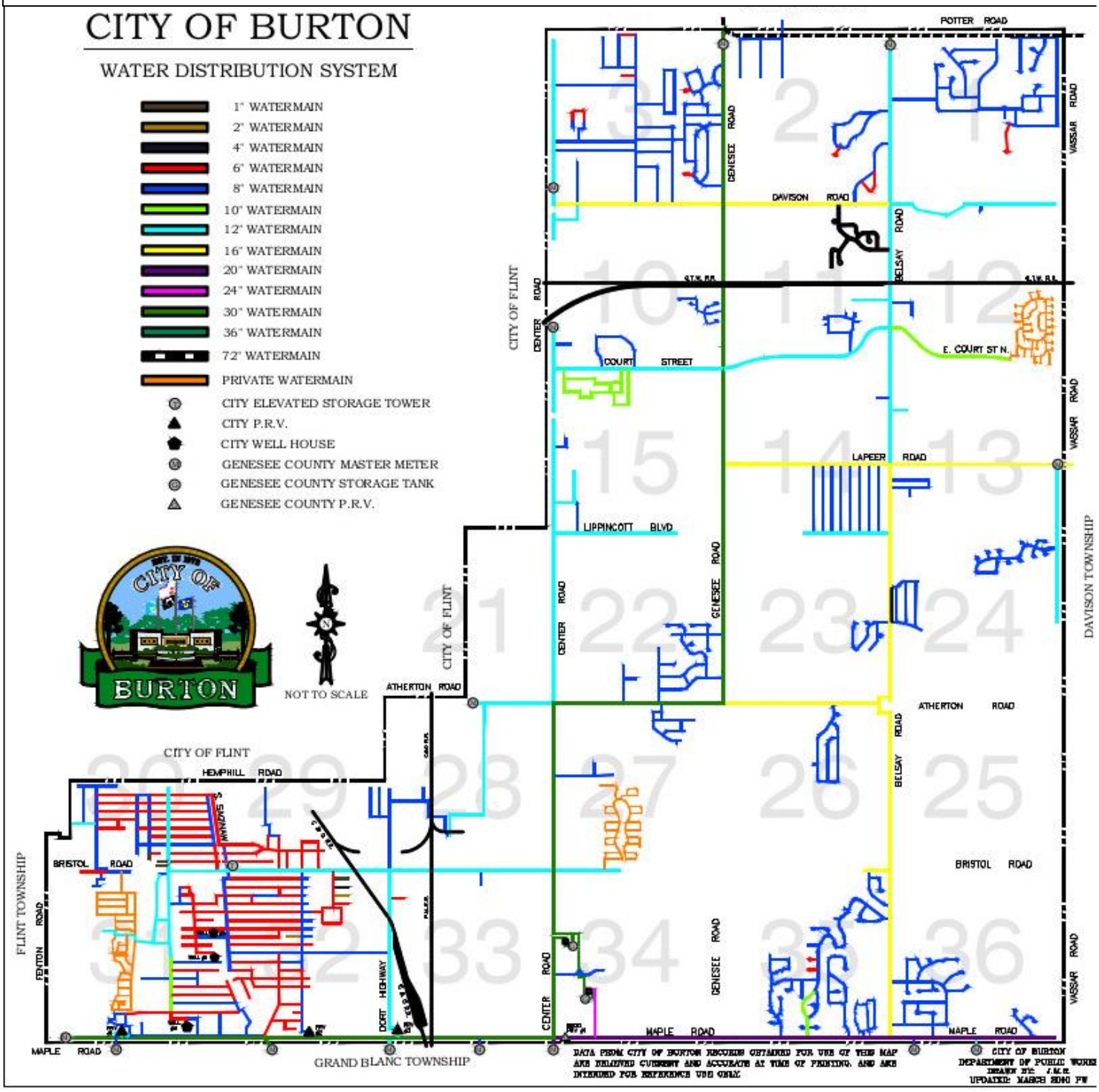
Isolation valves throughout the Tower District are inoperable, hampering the ability to effectively isolate water main breaks and adversely affecting timely and efficient repair efforts. Because replacing inoperable valves will increase both system reliability and service life while ensuring proper system operation, this became a main goal of the projects completed with DWRF funds. The isolation valves in Phase 1 and 2 have been replaced and Phase 3 is nearing completion. Although several of the valves in Phases 4 and 5 have operational issues, the distribution is still capable of isolation.

*Map 2-2: Water Distribution System Map*

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## Distribution Main

The original water distribution system for the City of Burton was constructed in the 1940's. The majority of the original system is still in use today (Map 2-2). Ranging in size from one-inch to seventy-two inches, the distribution mains total more than 120 miles. The four-inch or less diameter mains consist of private mains.

Because the vast majority of the city's distribution system was constructed in the 1940's, the antiquated system has encountered problems with both build up and breaks. The iron pipes have begun to develop small mounds of corrosion products on the interior of the pipes, a process known as tuberculation - because pipe roughness increases with the presence of corrosion products, the hydraulic capacity and pressure of the pipe is reduced. As water mains continue to deteriorate, the frequency of water main breaks have continued to increase – 99% of the current water main breaks occur in the Tower pressure district. During the ten-year period from 2002-2012, over 200 water main breaks occurred within the Tower pressure district. Due to the frequent water main breaks within the system, the elevated water tank cannot be operated at its full capacity.

Efforts have been made in recent years to replace aging, undersized, and deteriorating mains through the completion of the DWRF projects. The four-inch main that was located within the Tower pressure district was removed in Phases 1-3. As the remaining water mains are replaced in the remaining two phases, the system will see an increase in reliability and capacity.

## Planned Projects

Phase 4 and 5 of the DWRF projects will be completed in 2017 and 2018 respectively.

## Recommendations

In order to fully analyze the ability of the distribution system to meet both current and future demands and to identify any deficiencies, a hydraulic model of the distribution system should be utilized. Each time the city makes improvements to its system, the model should be updated, allowing these improvements to be modeled and analyzed before sizing recommendations for future improvements are made. In all distribution systems, certain improvements will be required due to the age and conditions of existing mains, the ability to meet fire flow requirements, or the need for service at a new development. The following are criteria from the *Recommended Standards for Water Works* (2012) that should be followed when proposing any improvement project.

- Water distribution systems shall be designed to maintain treated water quality. Special consideration should be given to distribution main sizing, providing for design of multidirectional flow, adequate valving for distribution system control, and provisions for adequate flushing. Systems should be designed to maximize turnover and to minimize residence times while delivering acceptable pressures and flows.
- All water mains, including those not designed to provide fire protection, shall be sized after a hydraulic analysis based on flow demands and pressure requirements. The system shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. The normal working pressure in the distribution system shall be at least 35 psi and should be approximately 60 to 80 psi.



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- The minimum size of water main which provides for fire protection and serving fire hydrants shall be six-inch diameter. Larger size mains will be required if necessary to allow the withdrawal of the required fire flow while maintaining the minimum residual pressure.
- When fire protection is to be provided, system design should be such that fire flows and facilities are in accordance with the requirements of the ISO.
- Dead ends shall be minimized by making appropriate tie-ins wherever practical, in order to provide increased reliability of service and to reduce head loss.
- Dead end mains shall be equipped with a means to provide adequate flushing. Flushing devices shall be sized to provide flows which will give a velocity of at least 2.5 feet per second in the water main being flushed. They may be provided with a fire hydrant if flow and pressure are sufficient.
- Storage facilities should have sufficient capacity, as determined from engineering studies, to meet domestic demands, and where fire protection is provided, fire flow demands.

### *Sanitary Sewer*

The City of Burton is a part of Sewer District No. 1 of the Genesee County Wastewater system. Constructed in the mid-1960's as part of the county-wide collection and treatment system, the initial network of collector, lateral, and main line sewers were built along the main mile roads and in the residential areas. The Genesee County interceptor, a network of pump stations and large diameter force mains that traverse the city, transfers sewage from Sewer District No. 1 to the Anthony Ragnone Wastewater Treatment Plant. Sewage from the city enters the county interceptor at the pump stations located throughout the city. Interceptor maintenance is the responsibility of GCDC-WWS while all other mains are the responsibility of the city.

As property has developed over recent years it has been the responsibility of the developer to provide sanitary sewer to the development. There is, however, a City Ordinance that states an individual is not required to connect to the sanitary sewer system if the dwelling is more than 200 feet from the right-of-way. It is estimated that there are less than 6 residences in the community that remain on private septic systems.

When the Genesee County interceptor was constructed, the City of Burton purchased sufficient sewer units to account for both current residents and for potential developments. As of 2001, the original units that each municipality purchased no longer apply. In lieu of a service unit, each new connection to the system results in a fee to the county. It does not appear that sanitary sewer capacity is a hindrance to future growth in the City of Burton.

Over the previous two years the city has cleaned and televised approximately 120 miles of the sanitary sewer system through a $2 million Stormwater, Asset Management, and Wastewater (SAW) grant; the Asset Management Program completed under the SAW grant will be published in the spring of 2017. The 2016 construction season will see the completion of 6,200 feet of main line sewer and five sewage lift stations with a $6.4 million State Revolving Fund (SRF) loan. Inflow/Infiltration (I/I) inspection are currently underway.

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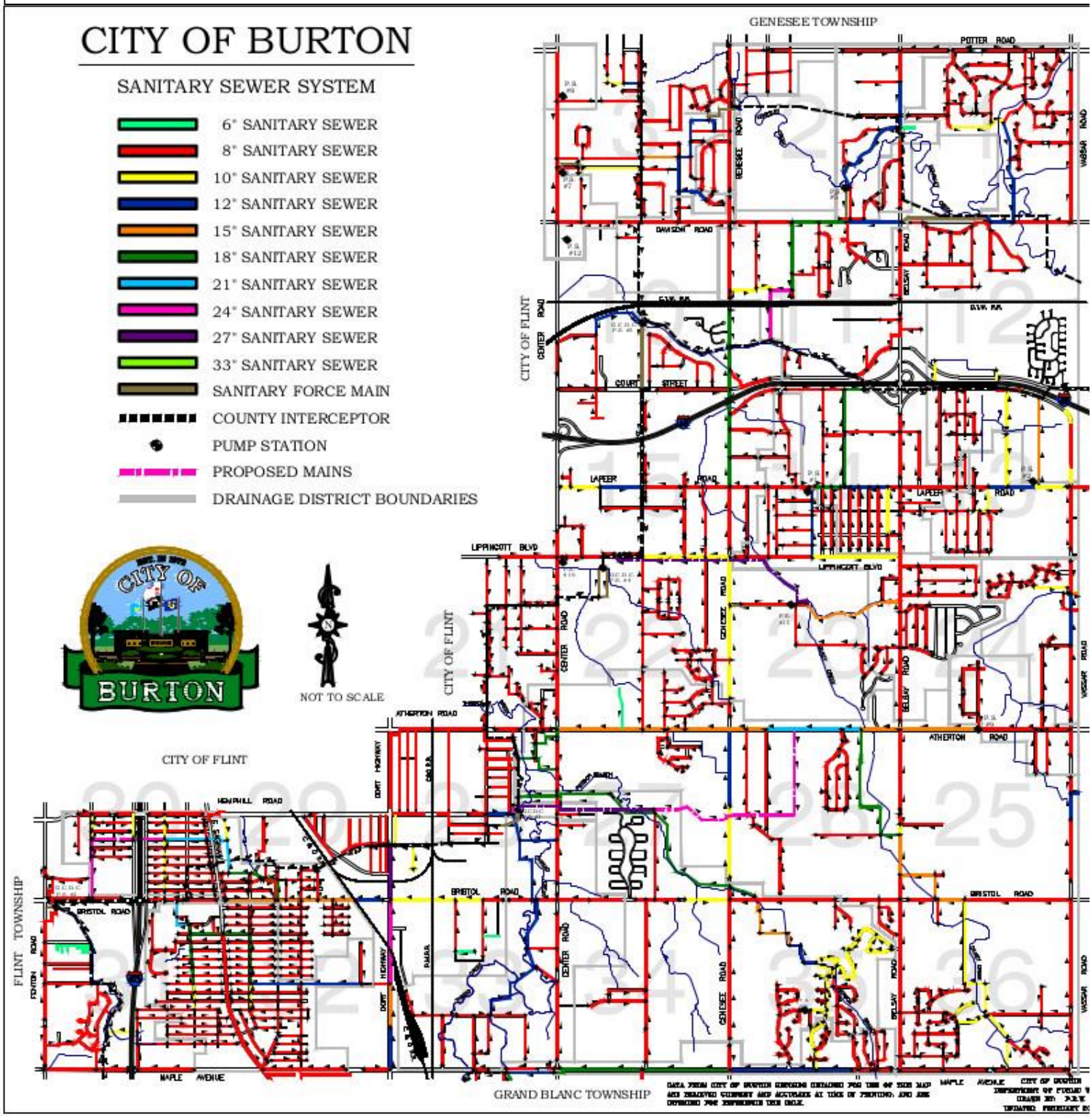
*Map 2-3: Sanitary Sewer System Map*

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### *Drainage*

The City of Burton contains eleven major county drains, all of which are maintained by the GCDC-WWS – several of these major drains include smaller sub drainage districts that serve one or more subdivisions or developments. Approximately three-fourths of the city drains directly or indirectly into Gilkey Creek. The remainder of the city drains into Kearsley Creek. All storm drainage eventually enters the Flint River.

When the drainage district boundaries are compared with the existing land use map (4-1), the Kearsley, Gilkey, Robinson, and Pierson districts appear to contain the largest amounts of undeveloped land. Additional study is necessary to identify the capability of these drain to handle increases in flows, particularly at peak periods following rain events. At a minimum, development in these areas should be required to demonstrate adequate drainage capacity and/or incorporate flood retention/detention facilities to meter runoff into the existing drainage systems.

## Transportation

Transportation infrastructure can have a dramatic impact on the development of neighborhoods and regions. The transportation system should be considered an investment in the community. People and goods are transported throughout the city in order to support commerce, industry, health, education, activity, and other important functions. Transportation systems that provide adequate access to all areas of a community allow greater development opportunities. Certain transportation elements such as railroad lines or freeway interchanges have significant effects on the development potential of land. Other benefits may include emergency responsiveness, sustainability, economic development, and others.

The quality of life experienced by a community is largely effected by available transportation. An equitable and sustainable transportation network takes into account both safety and accessibility for residents of all ages, incomes, and abilities. Improving the safety of a transportation facility should account for all modes of transportation and users in order to foster a safe, connected, accessible transportation system for the multimodal movement of goods and people. Ease of mobility stimulates economic growth in neighborhoods and increases accessibility for all residents. By increasing transportation choices and improving access to essential services, governing authorities have the ability to decrease household transportation costs, reduce our nation's dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health.

This section will concentrate one the two principal elements in the city's transportation system: its street/road/highway network and, to a lesser extent, its railroad system. This report will analyze the current road system and identify characteristics including condition and jurisdiction and how these factors impact the system's ability to help or hinder the city's development and the residents' quality of life.

### *Street, Road, and Highway Network*

#### Street Classification

The City of Burton's roads are divided into five categories – state trunklines, county primary roads, county local roads, major city roads, and local roads (Map 2-4). This class division assigns jurisdictional responsibility for the maintenance of the roads to the state, county, and city.



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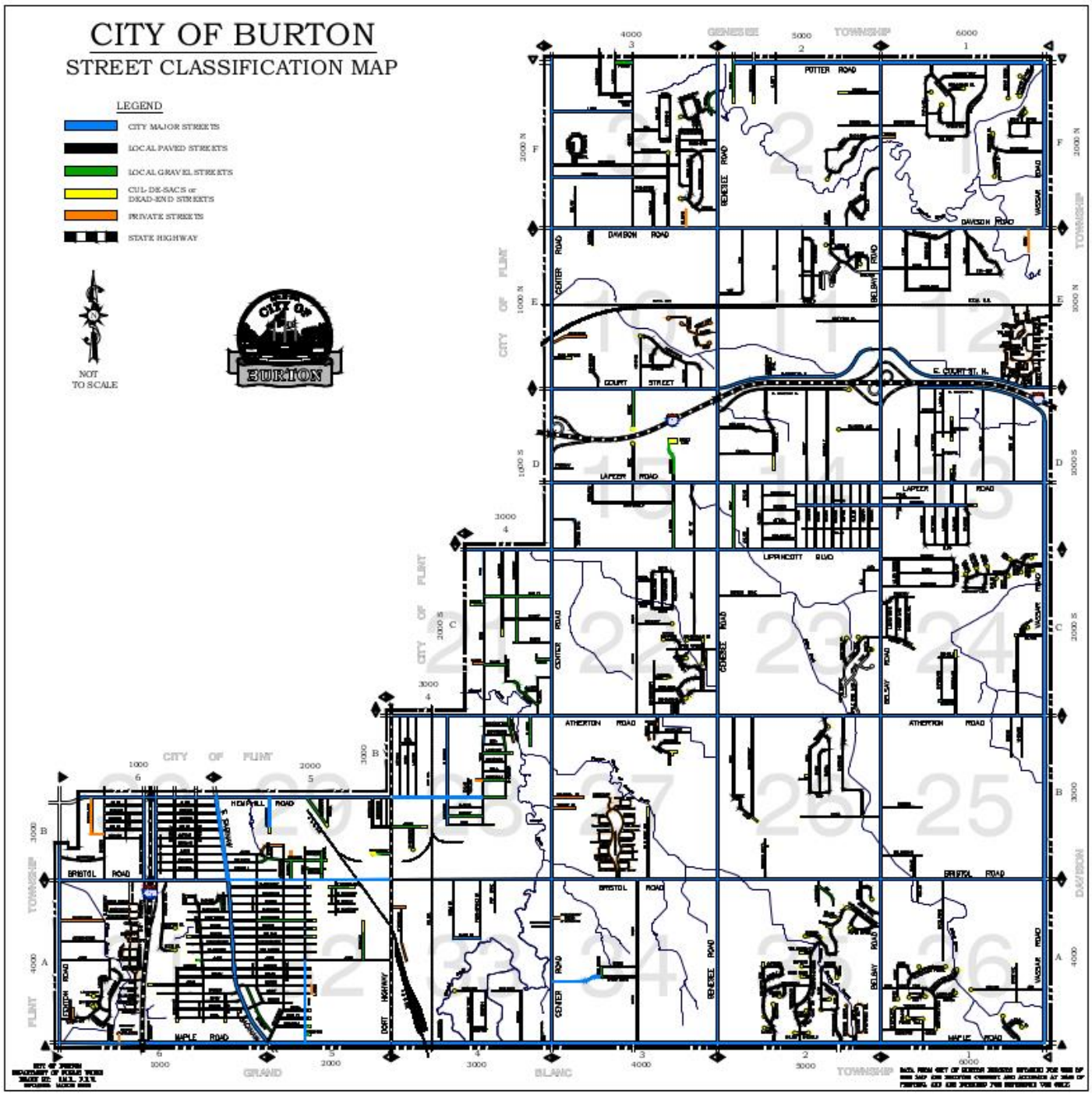
*Map 2-4: Street Classification Map*




Jurisdiction over the state trunklines belongs to the State of Michigan. The state trunklines that pass through the City of Burton include I-475, I-69, and M-54 (Dort Highway). The I-69 International Trade Corridor, or Michigan's Blue Water Gateway, is one of Michigan's 'Corridors of Highest International Significance' according to the Michigan Department of Transportation and is a commercial transportation route between the Midwest and Ontario, Canada.



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Genesee County oversees the county primary and local roads. County primary and local roads include the roads that serve as the township section division. The local roads include the less frequently travel section division roads and include parts of Maple Avenue, Vassar Road, and Potter Road.

The City of Burton is responsible for the major and local roads. The major roads under the jurisdiction of the city include Lippincott Boulevard, Howe Road, Hemphill Road, Court Street, Kleinpell Street, Iron Street, and portions of Term Street, Covert Road, Risedorph Street, and Leith Street. The remaining roads are classified as local streets and serve the residential or less traveled commercial areas.

## Road Quality

In 2015, the Genesee County Metropolitan Organization (M.P.O.) assessed the condition of the Federal Aid eligible roadways within the City of Burton. Pavement Surface Evaluation and Rating (PASER) is a rating system designed to assess the quality of roadway segments (Map 2-5). Developed by the University of Wisconsin-Madison Transportation Information Center, the rating system is a visual survey method used to evaluated roadway conditions on a scale of 1-10. A road with a PASER rating from 8-10 is considered 'good', meaning that routine maintenance is required. A rating in the range of 4-7 is considered 'fair' condition and requires capital preventative maintenance, such as overlays, in order to preserve the quality of the road. A road with a rating from 1-4 is considered 'poor' condition and requires structural improvements, such as reconstruction. The purpose of this analysis is to provide the city with a tool for planning future street improvements; creating an asset management plan will provide a guide for city officials to select the right treatment at the right time, maximizing the life of the street system.

The *2015 PASER Survey of Genesee County*, prepared by the Genesee County Metropolitan Planning Commission, provides a summary of the 2015 PASER ratings for the Federal Aid eligible roadways of each community in Genesee County. The City of Burton ranked #13 out of 14 cities and villages in Genesee County in average PASER ratings (APR), with #14 being the worst. Of a total of over 153 rated road miles within the city, approximately 3.9% of city's streets were in 'good' condition, 32.7% were in 'fair' condition, and 63.4% were in 'poor' condition – this results in an APR of 4.14. Federal Aid eligible roadways that were rated include streets in the state, county, and city's jurisdiction.

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## Map 2-5: PASER Street Rating Map

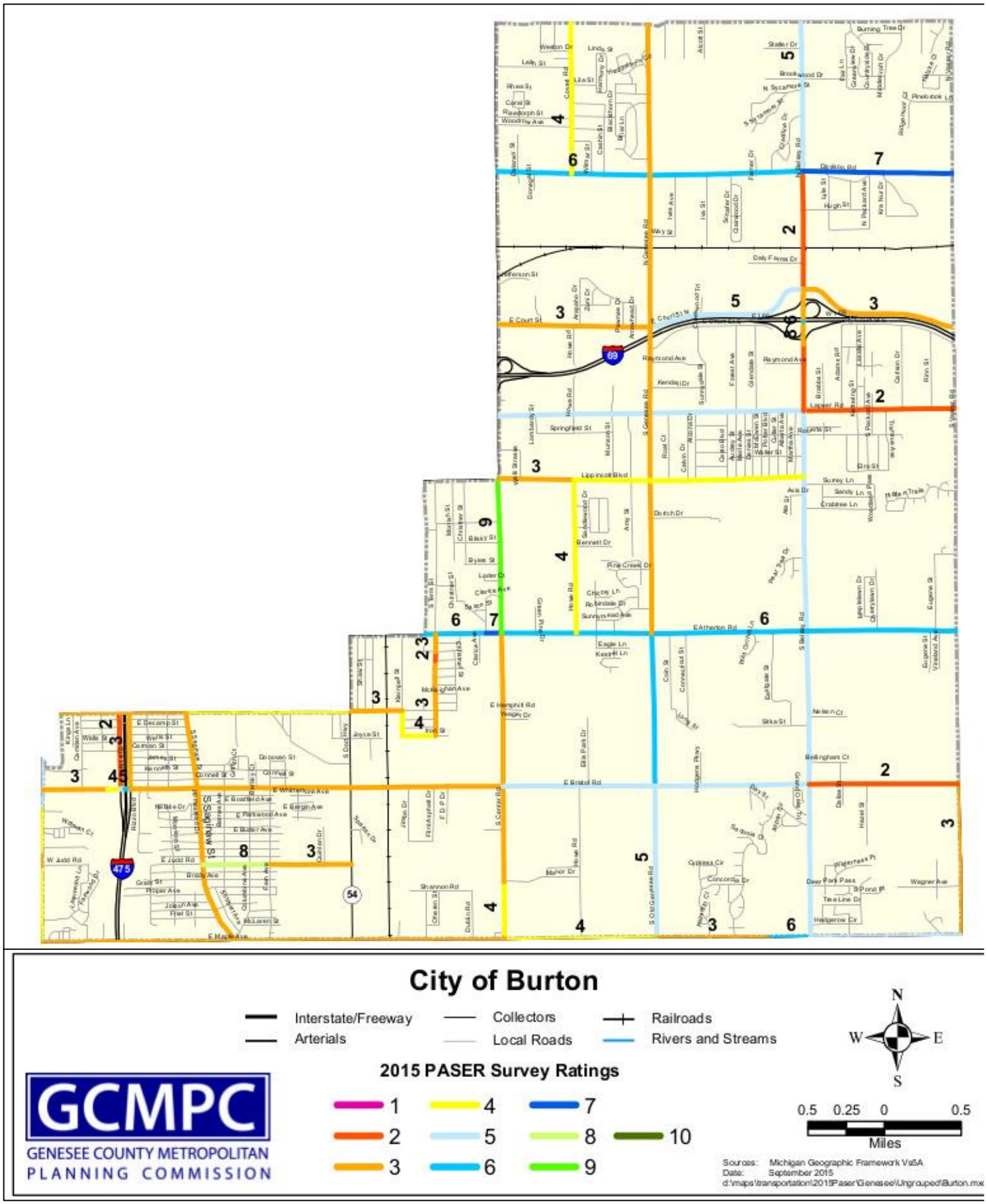


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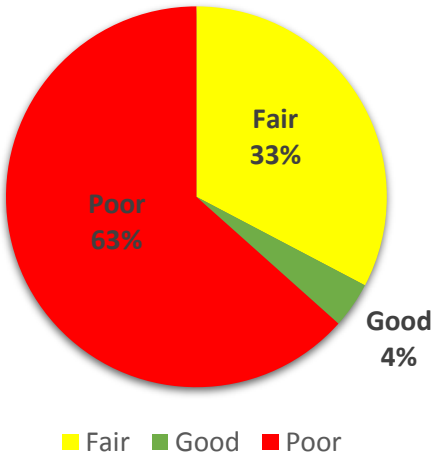
***Figure 2-1:*** **City of Burton 2015 PASER Ratings**




Asphalt pavements are typically designed for a 10 to 20-year design life. This life can be extended through regular pavement operations, but the pavement will eventually require major reconstruction. Regular pavement operations are broken into three main categories – routine maintenance, preventative maintenance, and reactive maintenance. Following a strict capital improvement plan is crucial in maximizing the life of the street system. The cost associated with preventative maintenance is significantly lower than the rehabilitation costs required to maintain roadways. Providing ongoing maintenance, such as resurfacing streets, is vital for maintaining the condition of assets. Rehabilitation treatments that are necessary when a pavement reaches a poor rating are six to eight times the cost of routine maintenance - as assets continue to deteriorate, the cost of repair will exponentially increase and can result in peripheral damage. Pavements that are properly maintained can yield a life of 40 years.

## Transportation Improvement Program

The Transportation Improvement Program (TIP) is a blueprint for how Metropolitan Planning Organization (MPO) will spend Federal transportation funds. Below is a table of the TIP List of Projects for the FY 2017-2020 in the City of Burton (Map 2-6).

**FY 2017-2020 Transportation Improvement Program Projects**

| FY | Project Name | Limits | Length | Description |
|---|---|---|---|---|
| 2017 | Center Road | Lippincott Blvd to Lapeer Rd | .44 | Preliminary Engineering |
| 2018 | Center Road | Lippincott Blvd. to Lapeer Rd | .44 | Road Resurfacing |
| 2018 | Lapeer Rd ACC in 2018 | Belsay Rd to Vassar Rd | 1.00 | Road Resurfacing |
| 2018 | Saginaw Street | Bristol Rd to Hemphill Rd | .53 | Preliminary Engineering |
| 2019 | Center Road | Davison Rd to North City Limits | 1.00 | Preliminary Engineering |
| 2019 | Saginaw Street | Bristol Rd to Hemphill Rd | .53 | Road Resurfacing |
| 2020 | Center Road | Davison Rd to North City Limits | 1.00 | Road Resurfacing |

## Traffic Counts

A map depicting the traffic counts for the City of Burton has been included. The traffic data represented on the map includes historic counts, 2014 counts, and 2015 counts. When compared to the traffic counts in the 1998 *City of Burton Land Use Plan*, the traffic counts on the included map have decreased anywhere from 1-40%. A few exceptions to this statement can be found in the southern portion of the city – these exceptions have observed an increase of 1-12%.



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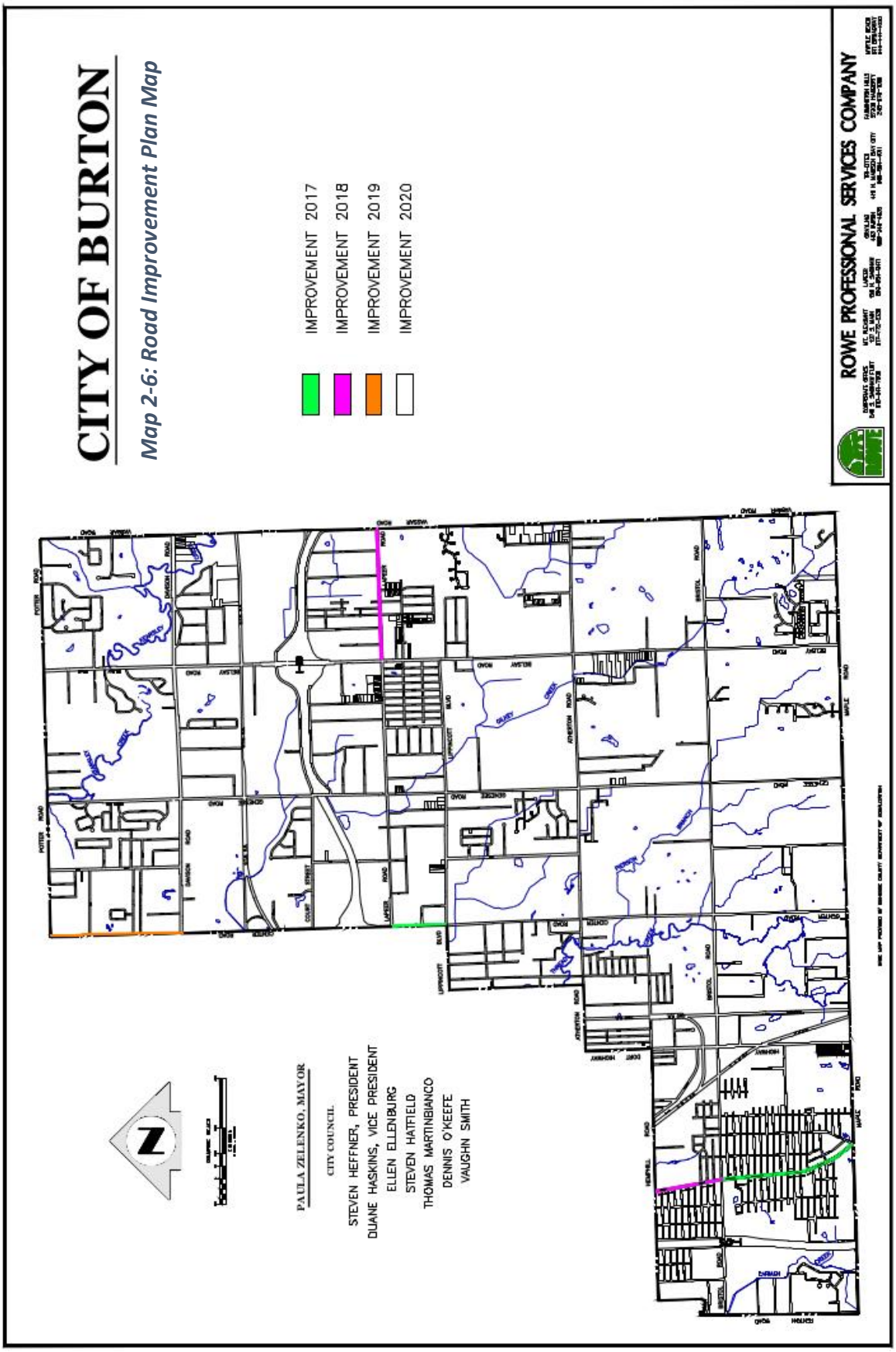




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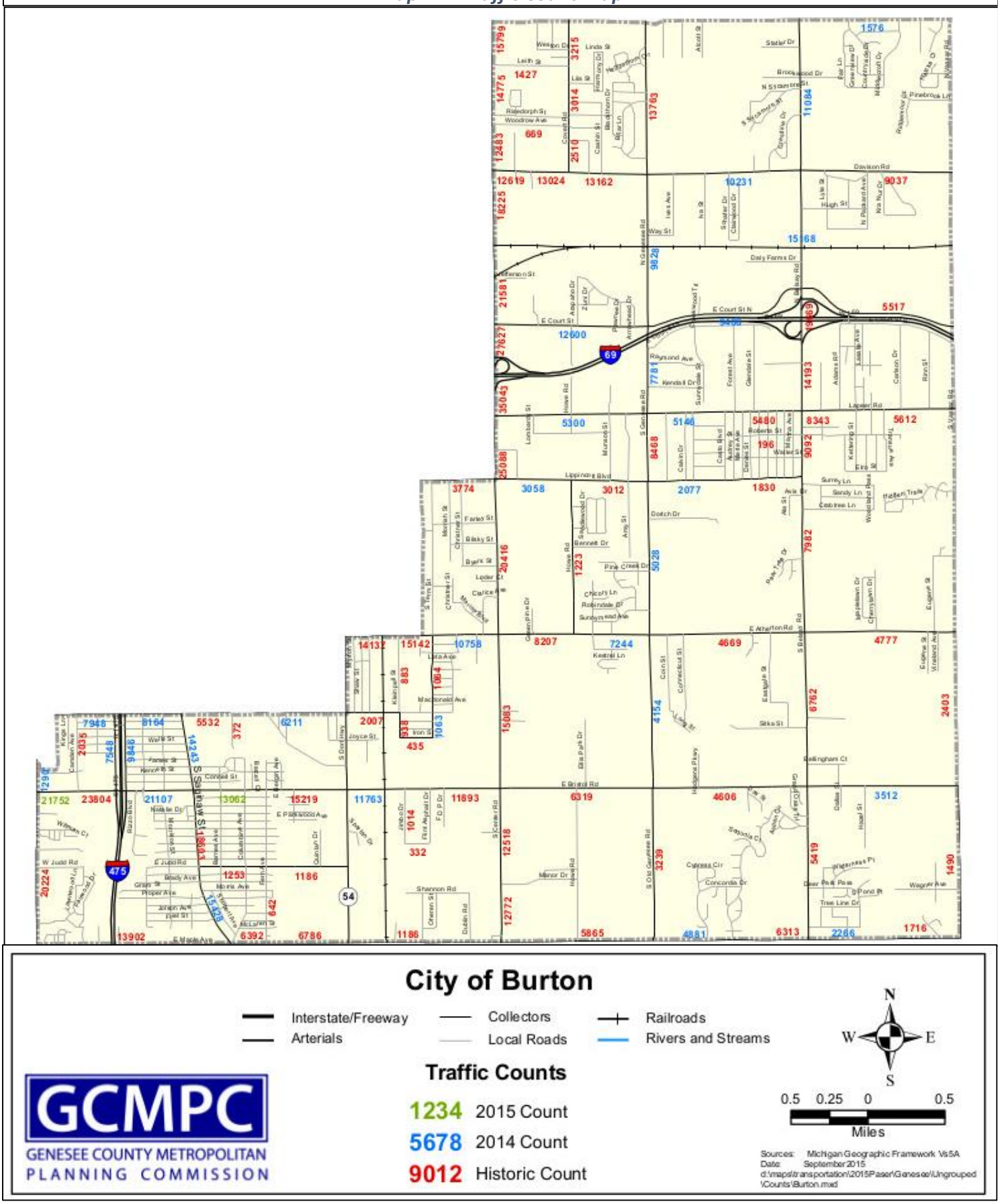
## *Map 2-7: Traffic Count Map*

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*Mass Transportation Authority Service*

The Mass Transportation Authority (MTA) serves public transportation within the Flint-Genesee County area. The MTA currently operates 14 primary routes, 56 peak hour routes, and 14 regional routes. Of the 14 primary routes, three enter the City of Burton. These include the South Saginaw route, the Lapeer Road route, and the Richfield Road route. All three lines terminate at the MTA Customer Service Center in downtown Flint and allow for connection to the remaining 11 lines. The MTA also provides a demand-response service known as 'Your Ride' that is available to all residents. The MTA has a service center for Your Ride operations located in Burton on Dort Highway. They have developed a Strategic Plan for 2016-2026. The plan highlights seven key core values: integrity, dedication to excellence, responsiveness, customer-focused, collaboration and partnership, transformational leadership, and innovation. From these

***Map 2-8: MTA Bus Route Map***

**Integrity** MTA demonstrates honesty, consistency, dependability, transparency, and accountability in all its actions.

**Dedication to Excellence** MTA consistently works to improve service delivery and maintain impeccable standards in every facet of the organization.

**Responsiveness** MTA anticipates and assesses the changing transportation needs of the community. It strives to respond with effective and efficient solutions.

**Customer-Focused** MTA values its passengers and treats them with dignity and respect. In all interactions, internally and externally, customer satisfaction is paramount.



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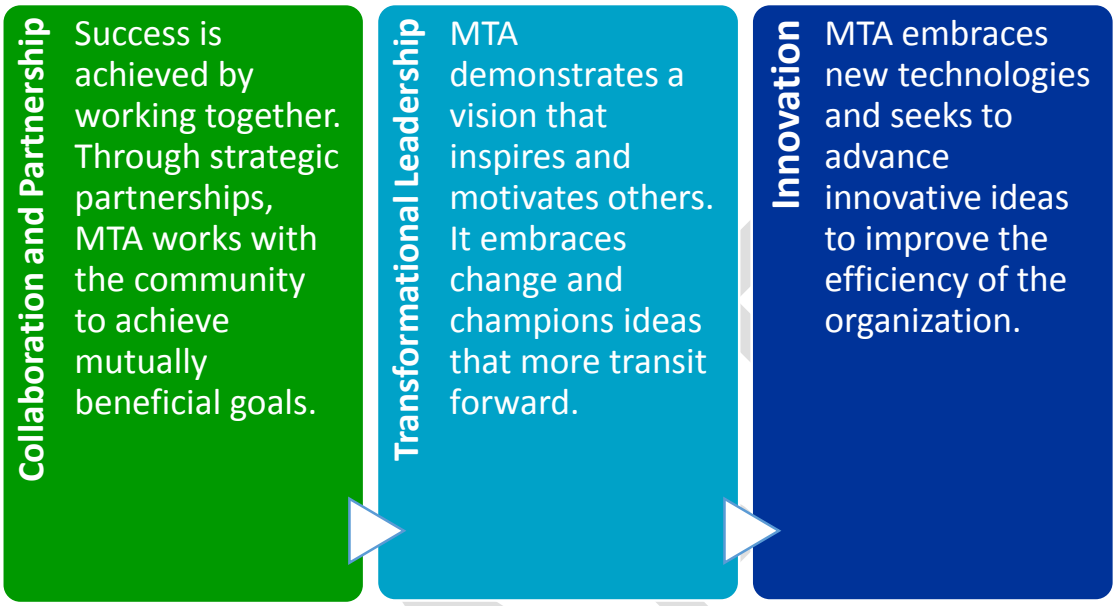
core values goals and objectives were created with an implementation plan.




There are many that apply directly to the City of Burton are listed below with the corresponding core value (MTA Strategic Plan 2016-2020, 16-17).

**Responsiveness**

- Meet requests for additional peak route services
- Expand regional routes to increase job access
- Increase capacity of Your Ride services

**Customer Focused**

- Implement TDN Bus Stop Accessibility recommendations

**Partnering**

- Explore regional connections with neighboring transit systems

**Leadership**

- Actively engage in community projects
- Explore potential for Saginaw Street Bus Rapid Transit (BRT)

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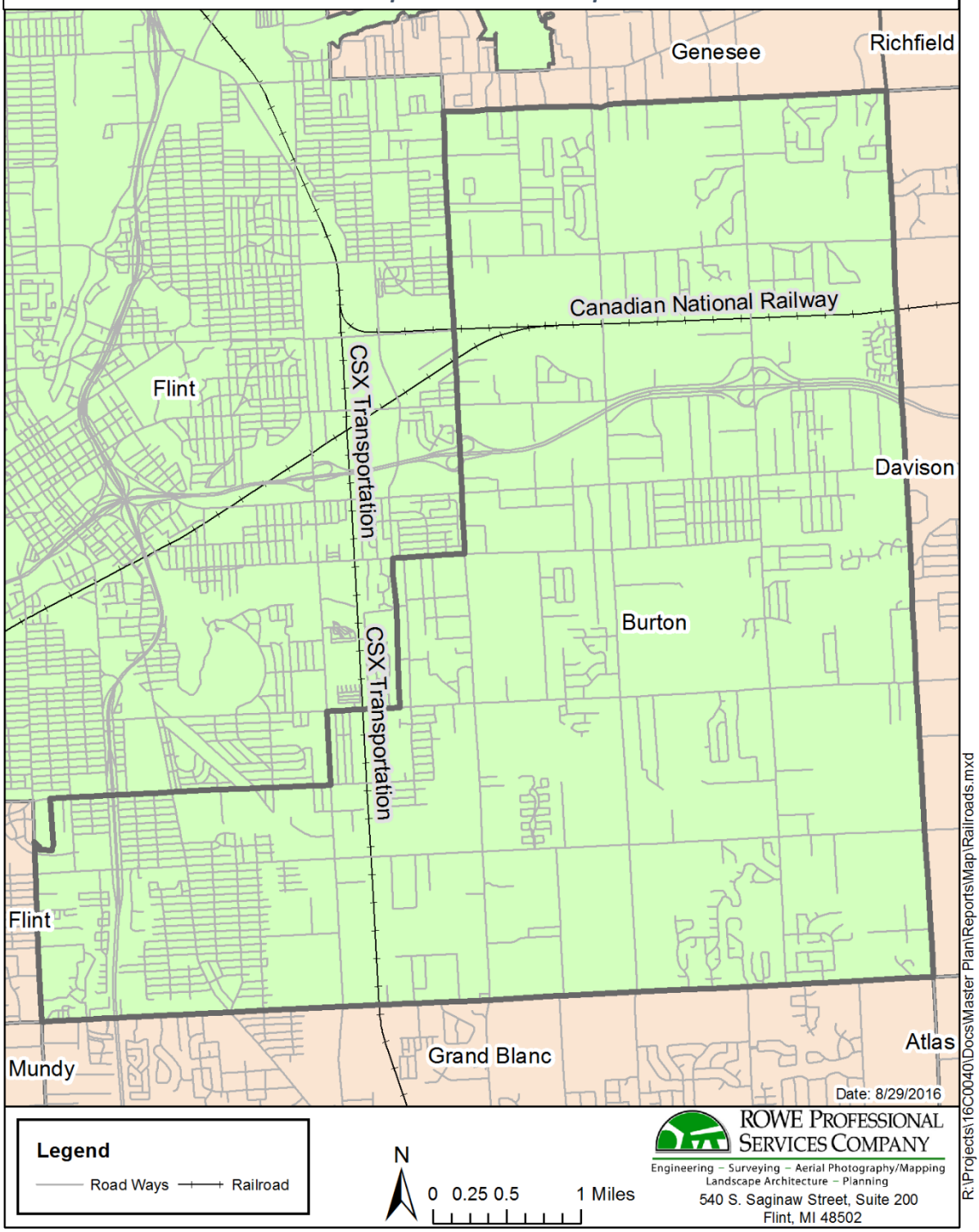
*Railroads*

Currently, the Canadian National Railway and CXS Transportation have active rail lines through the city providing access to destinations throughout the continent. A large portion of the land zoned for industrial uses in the city is located along these railroad corridors.

***Map 2-9: Railroad Map***



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# Chapter 3. Natural Features

There are many different components that impact land development. Natural features are one of those components. Identified natural resources that are sensitive to development include wetlands, floodplains, and water courses such as creeks. The destruction or disturbance of these features can cause hazards such as flooding and wasting important productive lands and renewable resources[4].

The identification of these features can help guide development that will not be as costly and maximize amenities without affecting the natural systems. Some of these sensitive features are also potential recreation and/or conservation areas within the city.

## Wetlands

In 1979, the Goemaere-Anderson Wetland Protection Act was enacted by the State of Michigan. This legislation was passed to help protect wetlands by restricting their use to certain activities (fishing, boating, farming, among others), but still allowing other activities after going through a permit approval process by the State of Michigan. Permits are approved only upon a review of an environmental assessment filed by the petitioner and upon a finding that the activity is in the public interest. In 1994, the act was incorporated into the Natural Resources and Environmental Protection Act.

Under the provisions of the Act, a wetland is defined as "land characterized by the presence of water at a frequency and duration sufficient to support, and under normal circumstances does support, wetland vegetation or aquatic life and is commonly referred to as a bog, swamp or marsh." The State of Michigan's regulations through the Department of Environmental Quality uses three tests to determine state jurisdiction wetlands.

Wetlands are very important natural resources. These areas help the region as well as local community in many natural amenities such as flood controls, wildlife habitat, recharge areas for ground water and much more. Wetlands are however sensitive to neighboring development and in some cases are protected by the state.

Through the Michigan Department of Environmental Quality (DEQ), they have a map of the wetland inventory (Map 3-1). Wetlands recognized by the National Wetland Inventory (NWI) and Michigan Resource Inventory System (MIRIS) are scattered about the city in dark green (Map 3-1). Two major wetland areas include the For- Mar Nature Preserve and Arboretum County Park, along Kearsley Creek, along Gilkey Creek, and along Thread Creek. In orange, are identified wetland soils, which are in more areas then the identified wetlands. Wetlands are scattered throughout the City of Burton creating potential impediments to development, but also an asset by providing green space, habitat, and flood control benefits.

[4] For a complete discussion of the importance of protecting environmentally sensitive areas see Performance Controls for Sensitive Lands, Planning Advisory Service Reports 307 and 308, June 1975



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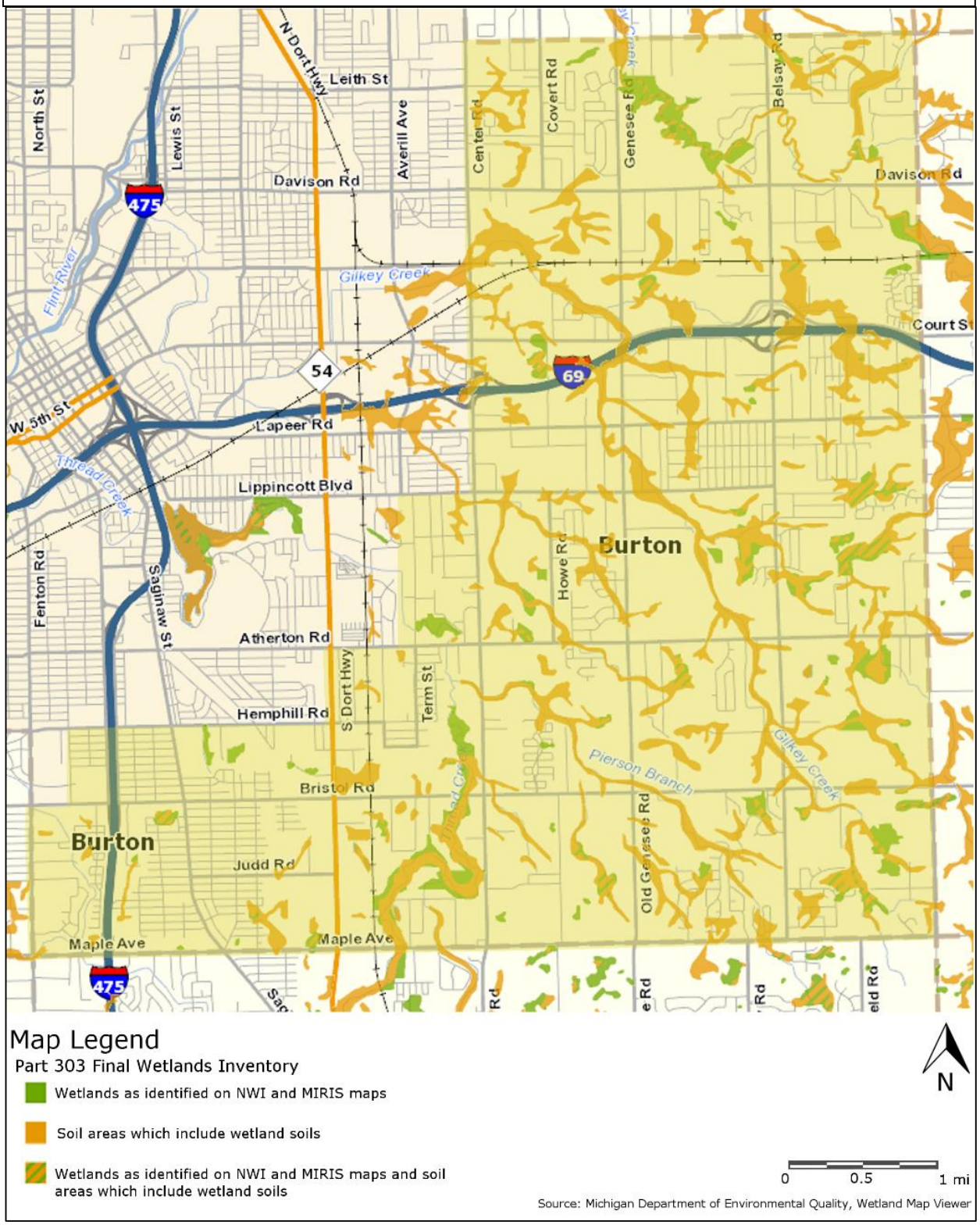
*Map 3-1: Wetland Areas in City of Burton*



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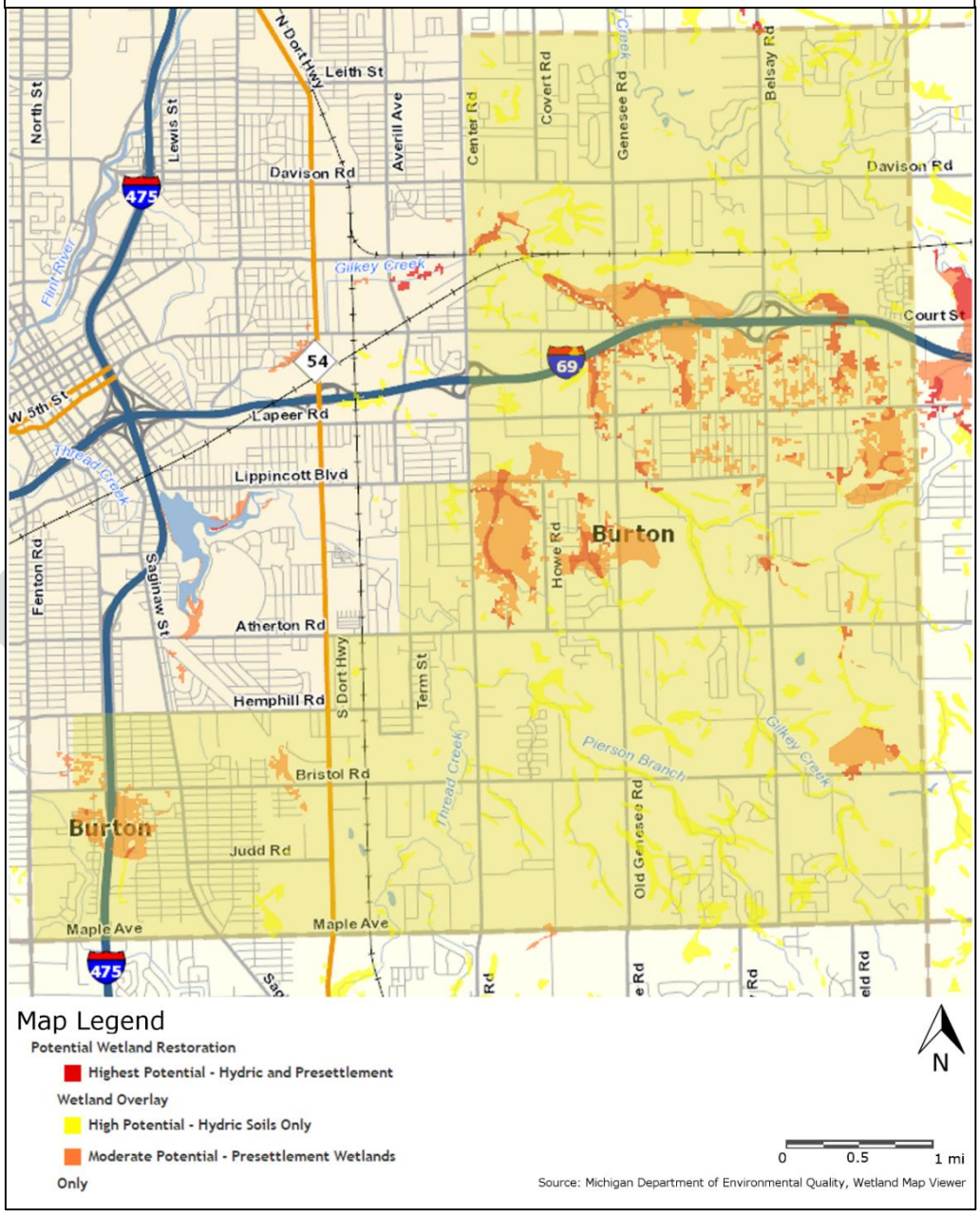
In the development of the community there has been some wetland conversion. Through evaluating the MDEQ's potential wetland restoration map overlaid with the existing land use map (Map 3-2) one can see potential areas where wetland could be restored. This is particularly important if a property owner wishes to develop an existing wetland, which may be allowed through restoration of previous. The two elements that evaluate the potential for restoration is based on the if the area has hydric soils and/or a pre-settlement wetland. The main grouping of potential wetland coverage is the southwest corner along I-475 just south of Bristol Road, near Lippincott Blvd between Center Road and Belsay Road along Thread Creek Gilkey Creek, and Pierson Branch, and along the I-69 corridor by Genesee Road. Some zoomed in callouts include along I-475 south of Bristol, middle section of Thread and Gilkey Creek, and along the I-69 corridor by Genesee Road.

*Map 3-2: Potential Wetland Restoration in City of Burton*



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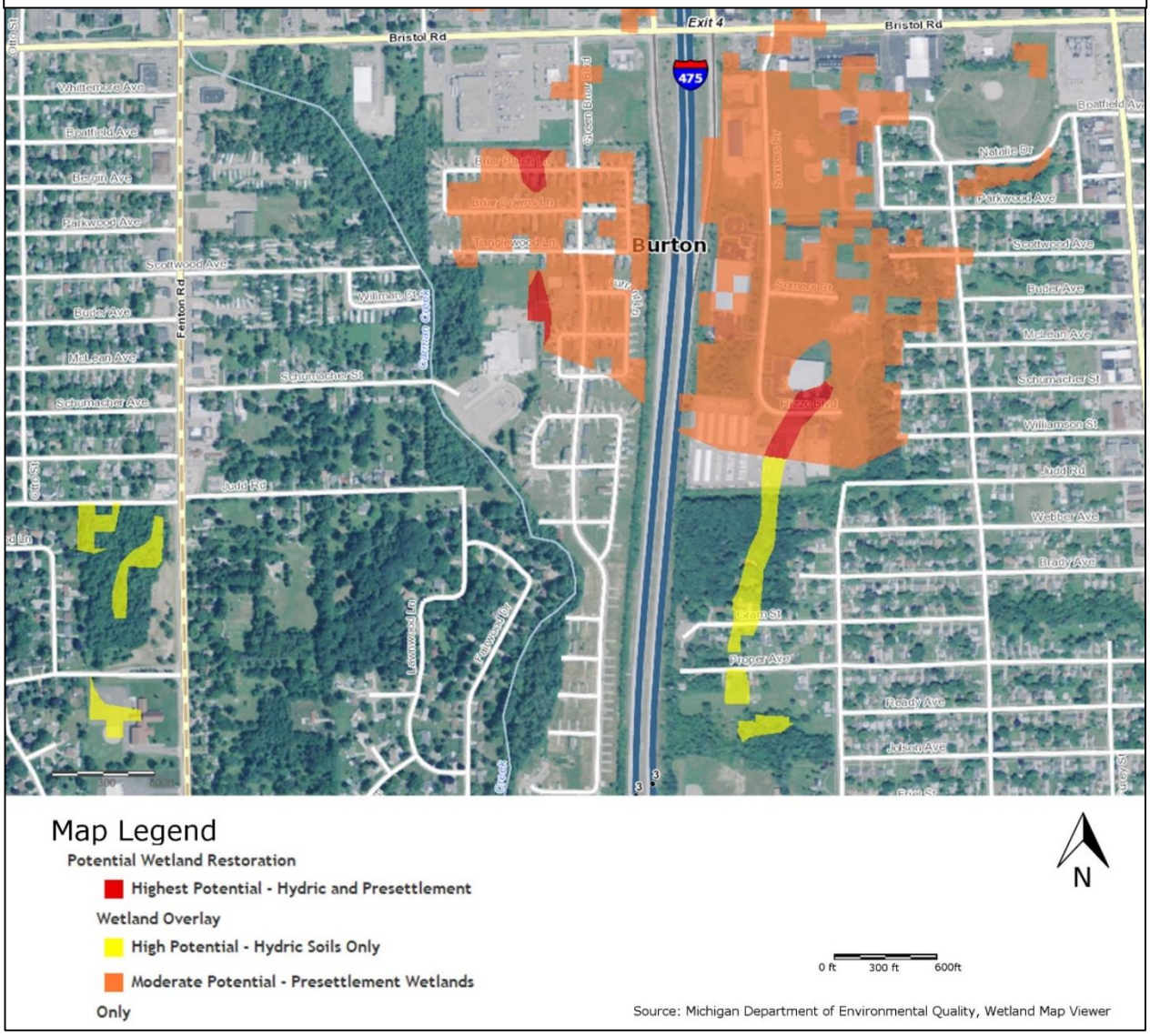
Along I-475 just south of Bristol Road is mainly located in an area of industrial, mobile home park, commercial, and public and quasi-public land uses (Map 3-3). Within the industrial park there is a large amount of green space. Incentive zoning techniques could be used to encourage the restoration of this highly potential wetland area. A win-win situation could be the restoration of a wetland to help the community while the property owner will have less mowing area, potentially better storm management, and other intrinsic values.

***Map 3-3: Potential Wetland Restoration Along I-475***




The area along Thread Creek and Gilkey Creek involve a collection of uses including mostly vacant land along Thread Creek (Map 3-4). Other adjacent uses to this area include utilities, multiple family, single family housing, general commercial, community shopping center, and public & quasi-Public uses. Wetlands can be a good transitioning buffer from commercial type uses to residential using because of wetlands' ability to hold and release storm water and natural space to act as a sound barrier. The large amount of vacant land helps to buffer the two commercial type and utility areas from some of the multiple family and single family areas.



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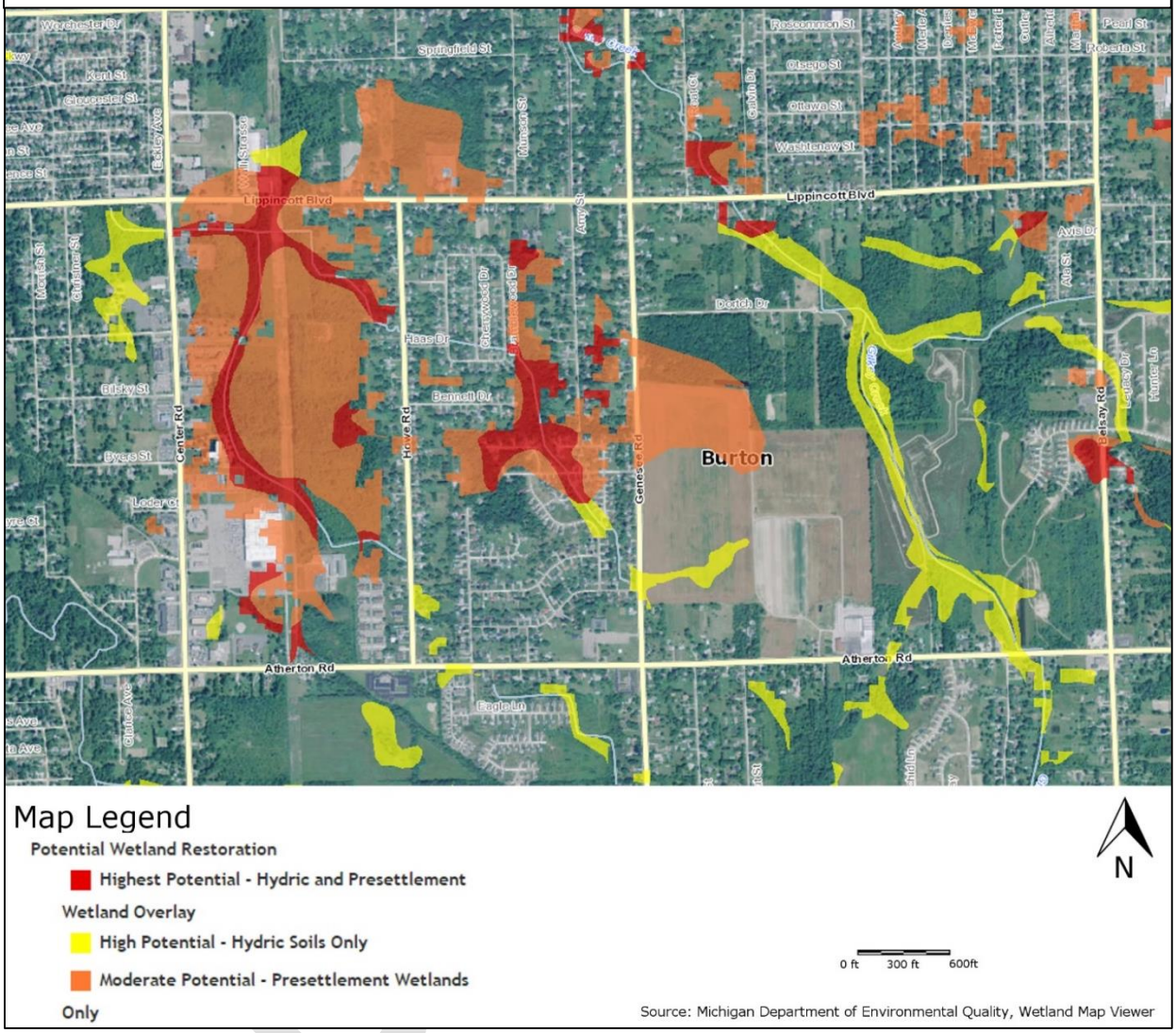
These wetland areas also are very close to the water courses of Thread and Gilkey Creek, which could be undesirable development locations. An alternative to additional development would be to restore it to a wetland or into the public domain to protect the creek as well as potential property owners.

***Map 3-4: Potential Wetland Restoration Along Thread and Gilkey Creek***




Lastly, one area of high potential wetland restoration is located along I-69 (Map 3-5). Focusing on the west side first along a northern part of Gilkey Creek is surrounded by single family, multiple family, public and quasi-public, vacant and agricultural, and commercial land uses. The vacant areas, Kelly Park, and residential areas could utilize the benefits of being along nature and utilizing the benefits of a wetland area.



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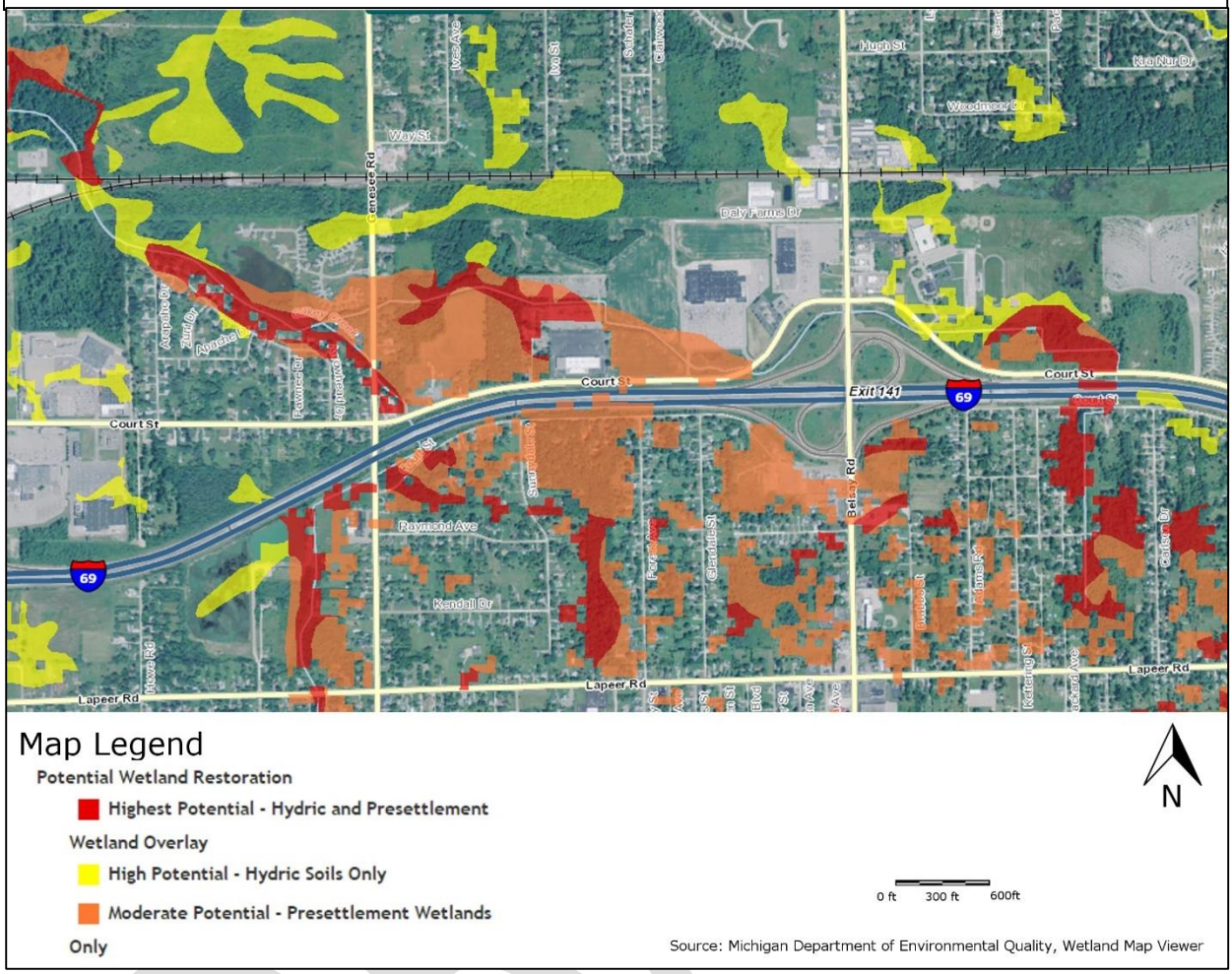
*Map 3-5: Potential Wetland Restoration Along I-69*




## Floodplains

The Federal Emergency Management Administration (FEMA), administers the National Flood Insurance Program (NFIP), which identifies communities with flooding potential and encourages these communities to participate in the program. As part of the program FEMA, in cooperation with the Surface Water Division of the Michigan Department of Environmental Quality, identify the "100 year flood plain" for that community. The "100 year flood plain" represents the areas along a river, stream, drain or lake which is expected to have a 1% chance of flooding in any given year.

The floodplain areas in the City of Burton coincide with the existing surface courses with its jurisdiction. Some of these major creeks include Gilkey Creek, Kearsley Creek, Thread Creek, and Pierson Branch. Through a comparison the existing land use Map 4-1 we can conclude that much of the existing development within the city does not occur in a flood plain.



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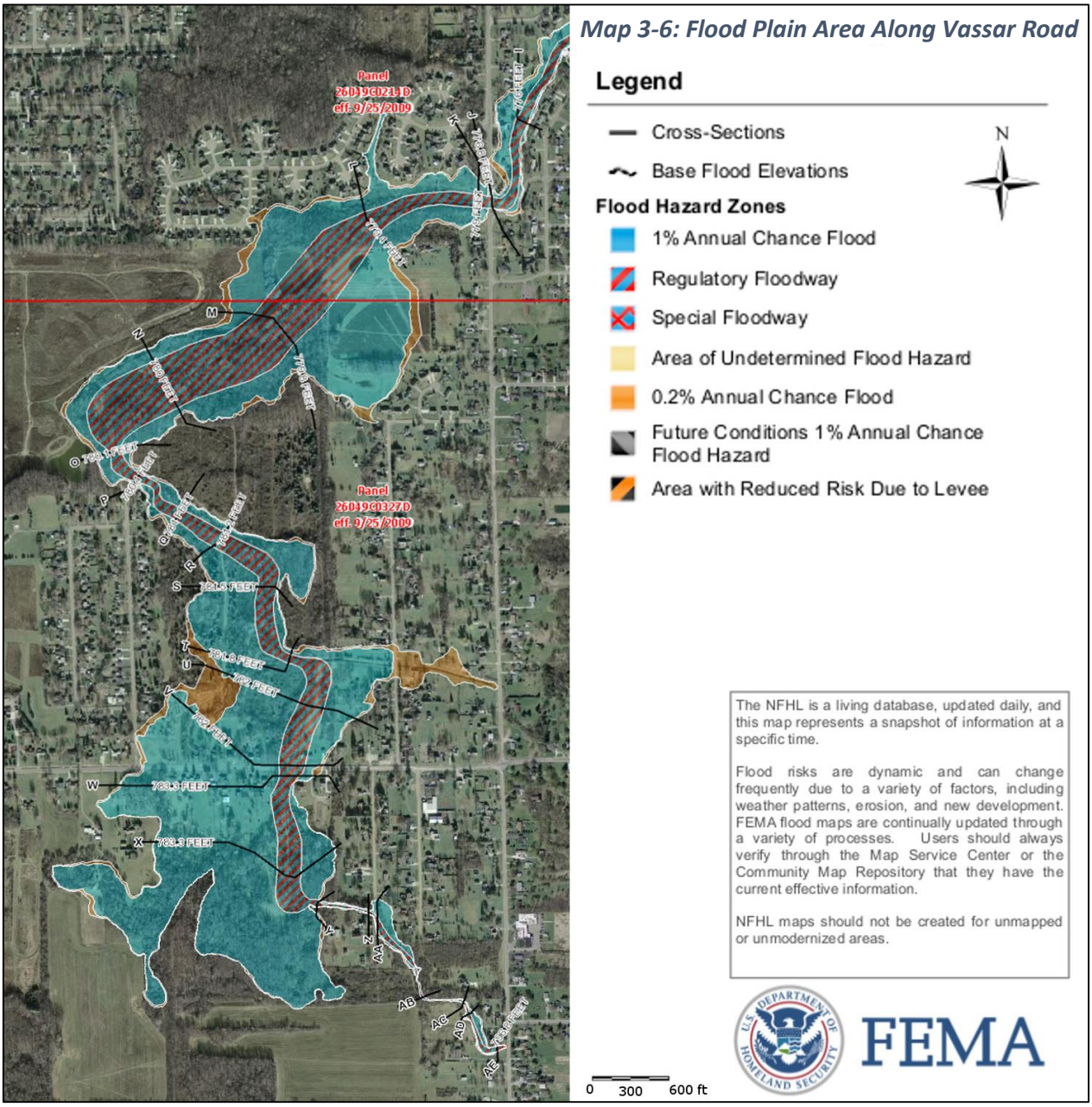
Below in Map 3-6 is a callout along Vassar Road. The main floodway, which is the channel that carries water downstream during a 100-year flood, is indicated with red hatched lines. The floodplain within the 100-year flood plain is indicated in blue, while 200-year floodplains are indicated in tan. This area is surrounded by single family homes and vacant/agricultural property. Many of the surrounding buildings are not directly located within the floodplain.




Due to the fact that little actual development exists in the existing floodplain, regulation of new development in the floodplain, rather than mitigation of existing floodplain development should be the primary focus of future development in these areas. Fortunately, existing provisions within the State of Michigan's Building Code provides regulations necessary to regulate such development.



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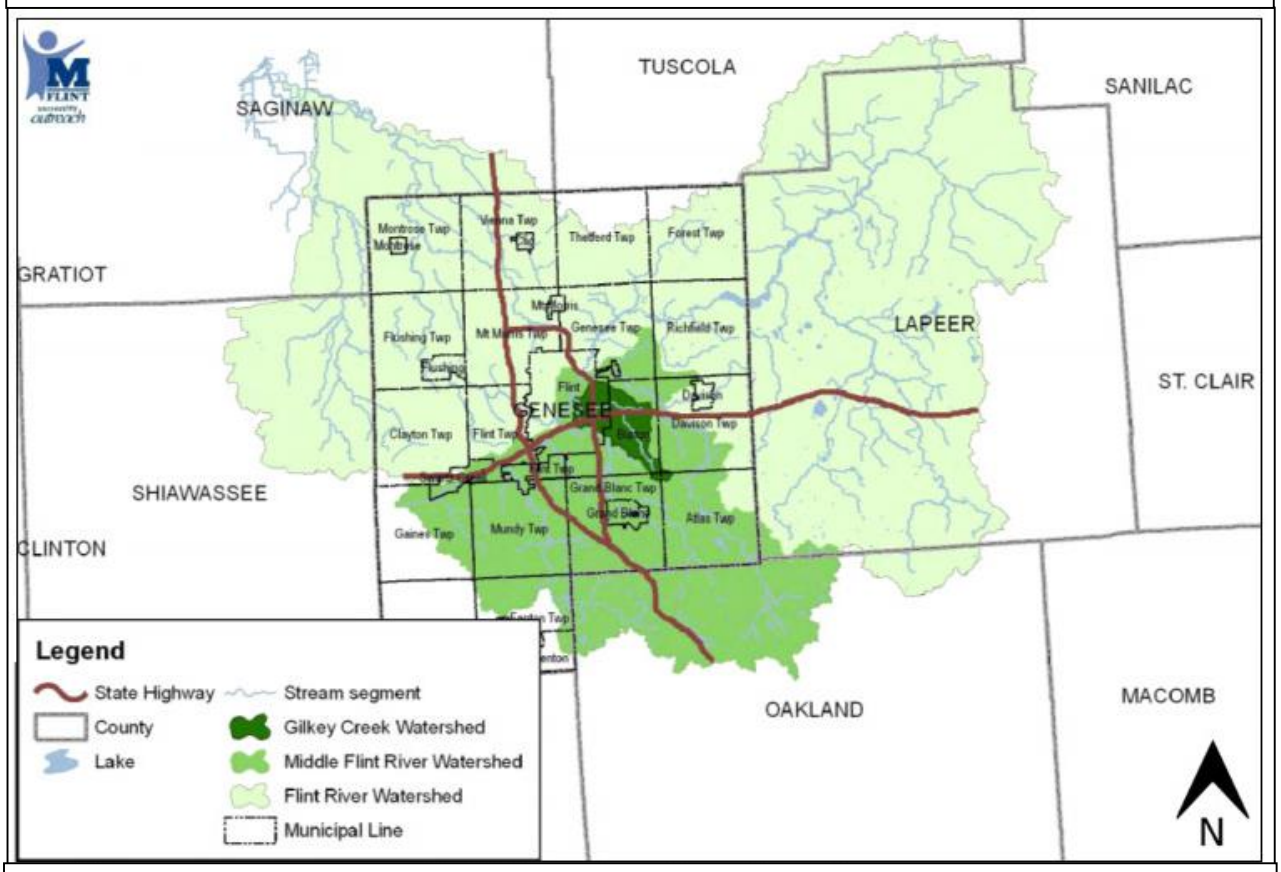
## Flint River Watershed Coalition Gilkey Creek Plan

The Flint River Watershed Coalition in 2006 established a Gilkey Creek Watershed Management Plan involving many parties including State of Michigan DEQ, Genesee County Drain Commission in City of Burton, and City of Flint. The Gilkey Creek primarily runs through the City of Burton (Map 3-7). The plan includes evaluation of designated and desired uses, goals and objectives, local policy and ordinance review, landscape preservation plan, water quality, best management practices, education plan, and evaluation. The plan indicates the most appropriate uses for the creek are as an education tool, for increased recreational use, and for increased aesthetics (pg 2-3).

***Map 3-7: Gilkey Creek Location in Flint River Watershed***




Map 18: In the different shades of green is the Flint River Watershed. In dark green is the Gilkey Creek Watershed. *Source: Gilkey Watershed Management Plan pg 6 (modified by ROWE Professional Services)*

Goals and objectives were developed for the Gilkey Creek listed below with the goal listed fist and corresponding objective(s) below (pg 3):

1. **Improving wildlife habitat and other aquatic life habitat.**
   - Reduce impacts from drain maintenance.
   - Increase the riparian corridor and create/incorporate a green infrastructure network
2. **Improve warm-water fishery**
   - Reduce sediment inputs
   - Decrease impact from storm events
   - Re-vegetate along the stream corridor



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3. **Increase creek aesthetics, educational opportunities and recreational use (for partial and total body contact)**
   Assessment of E. coli levels
   Increase visibility and aesthetic quality
   Promote current recreational opportunities
   Identify potential recreational opportunities
4. **Reduce flooding and improve navigation**
   Improve storm water management practices
   Source control
   Improve existing infrastructure (bridges, culverts, storm drains)
   Increase riparian vegetation and wetland use
5. **Improve creek for public health and drinking water**
   Reduce threat of bacteria and nutrient levels
   Create a wellhead protection program
   Reduce impacts from roadways
   Prioritize brownfield sites that pose a potential threat to surface water contamination

These goals and objectives are focused to increase/ maintain healthy parts of Gilkey Creek and increase quality of life for all that engage with the creek. One way to achieve the objectives and goals is through policy. The plan reviewed the City of Burton's existing land use policies and listed the following findings (pg 32-33):

1. Burton's policies are relatively weak for water resource protection. Specifically, the city has no policy on erosion control that prohibits clear cutting and stripping of lots for development, the drain office coordinates the soil erosion and sediment control for new development, incentives for impervious surface reduction (parking or road width variances), parking lot runoff controls, landscape standards, or natural feature setbacks.
2. Watershed planning is not currently incorporated into other municipal planning efforts (parks, master, etc).
3. The City of Burton should consider a wellhead protection plan (briefly mentioned in master plan). This is based on the variable types of soil and infiltration rates found in the city.
4. Burton should consider allowing on site treatment of storm water in parking lots and reevaluate its minimum parking requirements.
5. Maintenance of on-site detention basins are neglected prohibiting them functioning properly.
6. Laws exist for sediment runoff control from construction sites and for catch basin maintenance but appear to not be enforced regularly.
7. There is little correspondence between communities on goals of water quality and quantity.

In addition, the plan notes that the landowners can implement Best Management Practices (BMP). The three type of BMP is through structural (culvert or bridge replacement, pervious surfaces, etc.), vegetative (grassed swales, native plantings along creek, etc), and managerial (reducing slope for grading, silt fences, etc.).

With the advancement of either education, awareness, policy, or collaboration there is the potential to improve the Gilkey creek, which the Flint River Watershed Coalition is concerned and working on.



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# Chapter 4. Existing Land Use Inventory

### *Existing Trends*

The City of Burton grew as a first-ring suburb stemming from the City of Flint. As the City of Flint grew and job became available in the area people moved to Burton and other adjacent communities. As the population information has shown, the City of Burton's population has grown and decreased with no particular constant trend. As the once Burton Township became the City of Burton in 1972, which prevented further annexation from the City of Flint, more regulations and zoning to regulate the City's growth were adopted. As property was divided and developed the zoning became apparent in the land use. The land uses evaluated include commercial, industrial, residential (single family, multifamily, and mobile home) public and quasi-public, and vacant, Right of Way, and farmland.

### *Commercial Uses*

Commercial uses are most prevalent along the City's main north-south thoroughfares, but those uses lessen as you move east to Davison Township boundary. The most intense commercial uses are located along Dort Highway (M-54) and along the Saginaw corridor. On Dort Highway, the continuous commercial uses are broken up by a large faction of industrial uses or vacant land that was once industrial. This is most prevalent near the intersection of Bristol Road and Dort Highway. This trend is mostly due to the proximity to an existing and an abandoned railway intersecting in that area. In contrast when compared to the Saginaw Road corridor, there are lots of smaller commercial uses of property that are quite continuous with very few residential and public properties fronting Saginaw Road.

The Center Road corridor (though north of Lippincott, the west side is in the City of Flint) remains a solid commercial area. Due to Interstate 69 access large commercials centers have been devolved over the past 50 years. While the economic downturn and recession of the 2000's have increased vacancies at these developments, the overall use has not changed and are still utilized as the area continues to recover from the recession. Another area with this designation of use is on Center Road in an area mostly occupied by a local retail store. These two Community Shopping areas make up a total of 114.3 acres, separate from the general commercial uses.

There remains to be nodes of commercial uses at intersections of most the major mile roads within the City's limits. This trend remains to be much less prevalent the further east and south in the City and being nonexistent at every Vassar Road intersection at the eastern border of the City. The general commercial uses (not including "community shopping") make up 527.4 acres within the City.

### *Industrial Uses*

Industrial uses (as mentioned above) are concentrated mostly at the Bristol Road and Dort Highway intersection amongst commercial uses. This trend moves east from that intersection along Bristol Road and into industrial parks or large parcels fronting Bristol Road. There is some industrial along the east side of Center Road from the Robert T. Longway Boulevard intersection area north and almost to the Davison Road intersection. Other industrial uses are quite sporadic being far and few between the concentrated area mentioned herein. The total industrial land uses within the City total 329 acres, which does not include property that was industrial and is now vacant.

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### *Residential Uses*

Residential uses continue to dominate the City. High density levels of housing tapers off in the east part of the City making Center Road a threshold to the verifying housing density. A majority of the newer residential subdivisions within the City are located primarily east of Genesee Road with many of them having halted. Nonetheless, single family residential uses are the second highest property land use within the City with 5,699.5 acres. Other residential uses, such as multi-family (128.3 acres) and mobile home parks (271.1 acres) are much smaller in comparison.

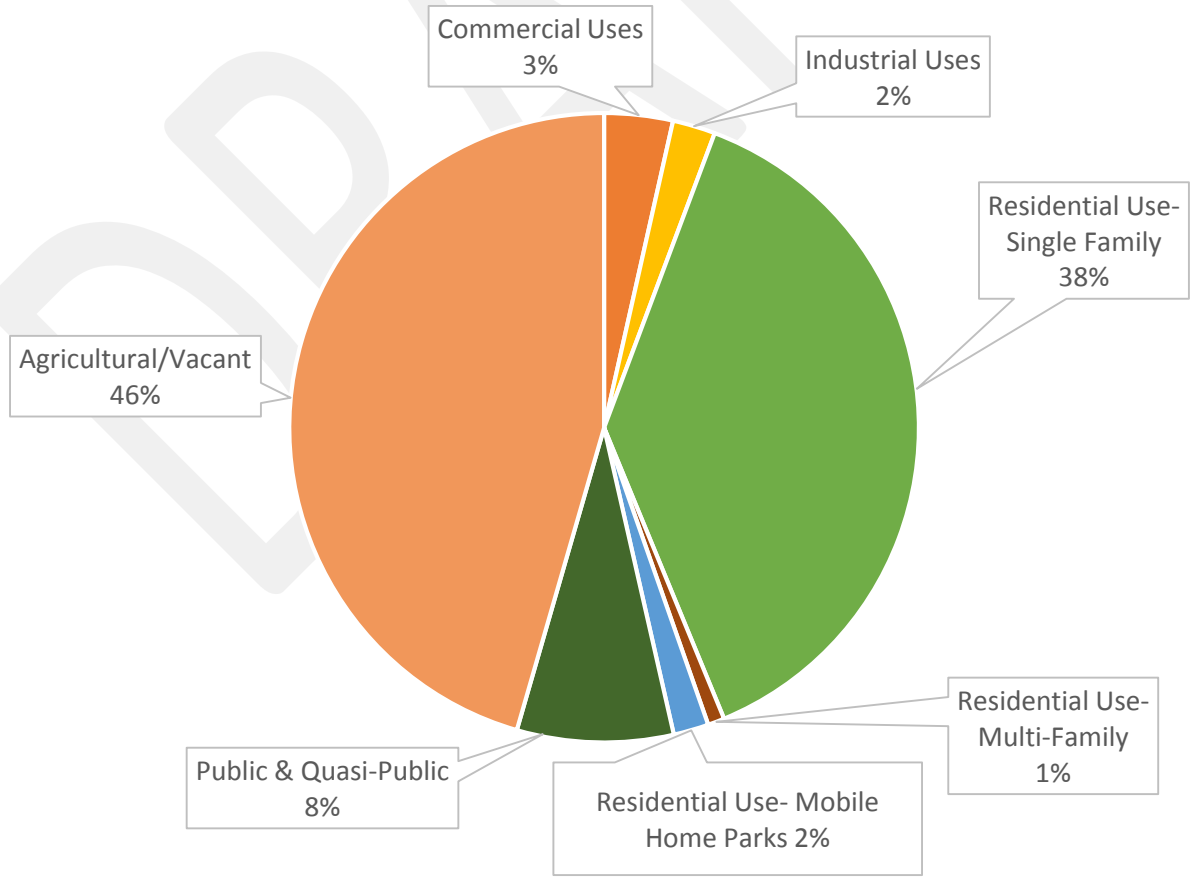
### *Public & Quasi-Public*

The use of property as public or quasi-public lands within the City is the third highest use behind single family residential. The amount of property being used as public and quasi-public property covers 1,202.6 acres and is spread generously throughout the City.

### *Agricultural and Vacant*

There is a large amount of farmland located on the southeast side of the City. There are pockets of agricultural and vacant land throughout the City. There main three clusters are located along Davison Corridor, I-475, and in the center/southern part of the City. The amount of property being used as agricultural and vacant amounts to 6,818.1 acres. This is the second highest land use in the City.

**Figure 4-1: City of Burton Land Use, 2014**

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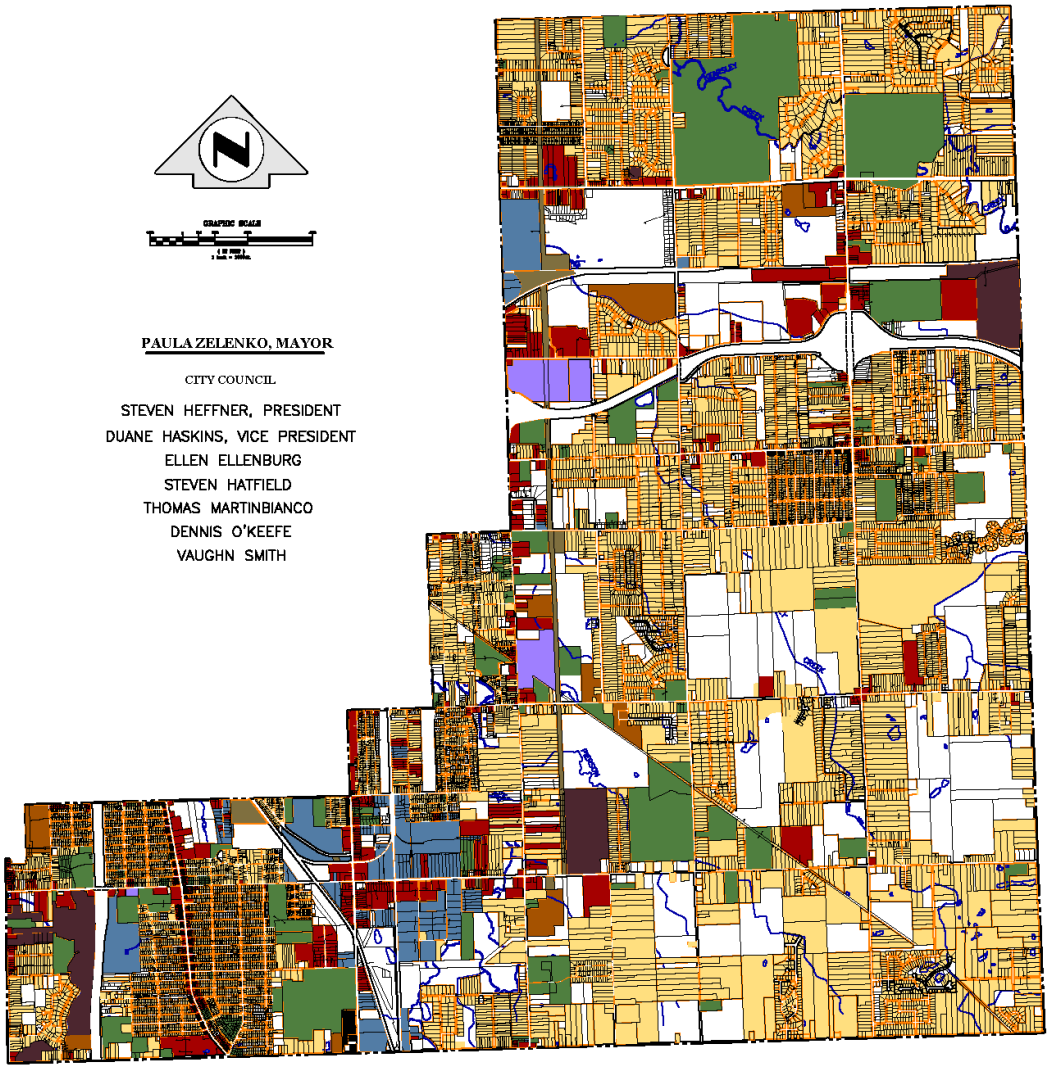
# CITY OF BURTON

*Map 4-1: Existing Land Use Map- 2016*




PAULA ZELENKO, MAYOR

CITY COUNCIL

STEVEN HEFFNER, PRESIDENT
DUANE HASKINS, VICE PRESIDENT
ELLEN ELLENBURG
STEVEN HATFIELD
THOMAS MARTINBIANCO
DENNIS O'KEEFE
VAUGHN SMITH

- SINGLE FAMILY RESIDENTIAL
- MULTIPLE FAMILY RESIDENTIAL
- MOBILE HOME PARK
- GENERAL COMMERCIAL
- COMMUNITY SHOPPING
- INDUSTRIAL
- PUBLIC & QUASI–PUBLIC
- UTILITIES
- AGRICULTURAL & VACANT

ROWE PROFESSIONAL SERVICES COMPANY

CORPORATE OFFICE 540 S. SAGINAW FLINT 810-341-7500 | MT. PLEASANT 127 S. MAIN 517-772-2138 | LAPEER 126 N. SAGINAW 810-664-9411 | GRAYLING 403 HURON 989-348-4036 | TRI-CITIES 416 N. MADISON BAY CITY 989-894-4071 | FARMINGTON HILLS 27300 HAGGERTY 248-675-1099 | MYRTLE BEACH 911 BROADWAY 843-444-1020

# Chapter 5. Other City of Burton Existing Plans

## DDA Visioning Plan

The Downtown Development Authority for the City of Burton have developed a visioning plan and guidebook to help assess the district now and guide the future (Figure 5-1). Some of the issues the plan focus' on include pedestrian and car friendly access and mobility, infill/redevelopment, placemaking within the district, establish gateways, and a common identity for the DDA District for both patrons and business owners to enjoy.

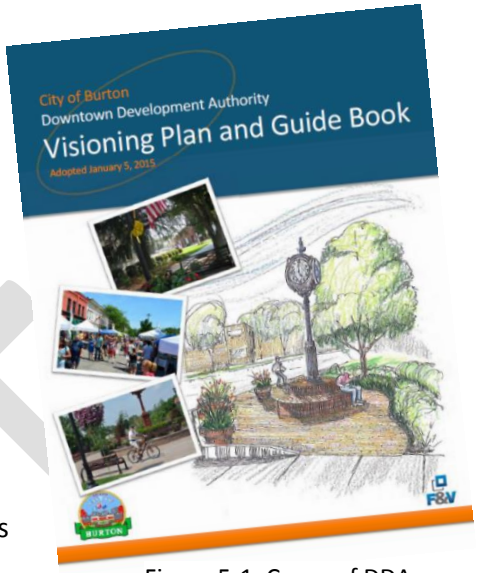


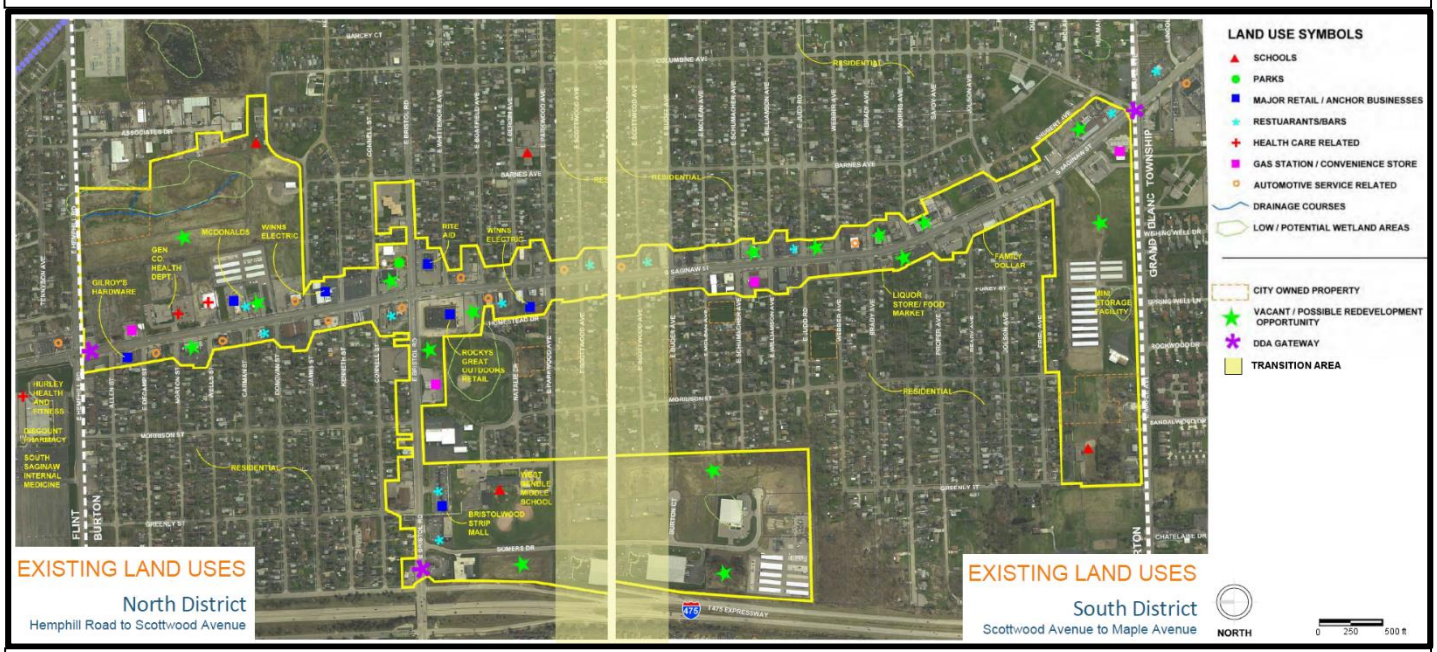

Figure 5-1: Cover of DDA Visioning Plan and Guide book

### *Current District Assessment*

The North District is classified as Hemphill Road to Scottwood Avenue where there are many small locally owned service and retail businesses (Map 5-1). There is a large amount of automotive related business in this part of the district. There are a few key anchor stores including Rocky's Great Outdoors, Winn's Electrical Showroom, Service Centers, Rite Aid, and Genesee County Health Department facility. Within this district there are a few identified vacant properties. This district is adjacent to single family residential areas.

The South District is located between Scottwood Avenue to Maple Avenue and has a collection of fast food and bars and grills. There is a higher number of vacant, undeveloped, or available properties in the South District where there could be improvements on the diversity of food selection and entertainment for youth, young adults, and senior citizens.

***Map 5-1: DDA District Exiting Land Uses Map***




Map 5-1: In the North and South Districts displayed are the existing land uses. *Source: DDA Visioning Plan and Guide Book pgs 2.3-2.4*



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*Future Vision & Design Guidelines*

The DDA Visioning Plan contains five goals developed with several objectives for each. Below are all five goals with some of the different objectives that correlate with each goal:

**Goal #1) Improve traffic and pedestrian circulation for a consistent flow that will slow vehicles, encourage walkability, and improve pedestrian safety:**

Implement a traffic study to establish current counts and design volume of streets as well as detailed options and locations for medians, traffic calming devices, road diet options, access management, signalization upgrades, and phasing scenarios.

Maintain communications with adjoining communities related to future nonmotorized pathway implementation, particularly the Grand Traverse Greenway.

Establish a committee to review all future road plans within the district for compliance with complete streets and universal access design methods

**Goal #2) Improve the visual appearance to be more welcoming and that patrons will want to re-visit:**

Establish new, more welcoming and flexible, zoning codes specific to the DDA district related to landscaping, signage, building materials, dimensional restrictions, and nonconforming elements.

Create welcoming gateways whether entirely within the road right of way or with development of properties adjoining gateways and key intersections.

Develop conceptual streetscape plan of phase I that will establish a design scheme for all elements within the street right of way (ie: lighting, landscaping, pavement and sidewalk treatments.

**Goal #3) Create an identity for the City of Burton Downtown area:**

Develop a cohesive wayfinding, Banner, and DDA district signage plan that will identify a consistent scheme throughout the district and include the DDA's and City's logos.

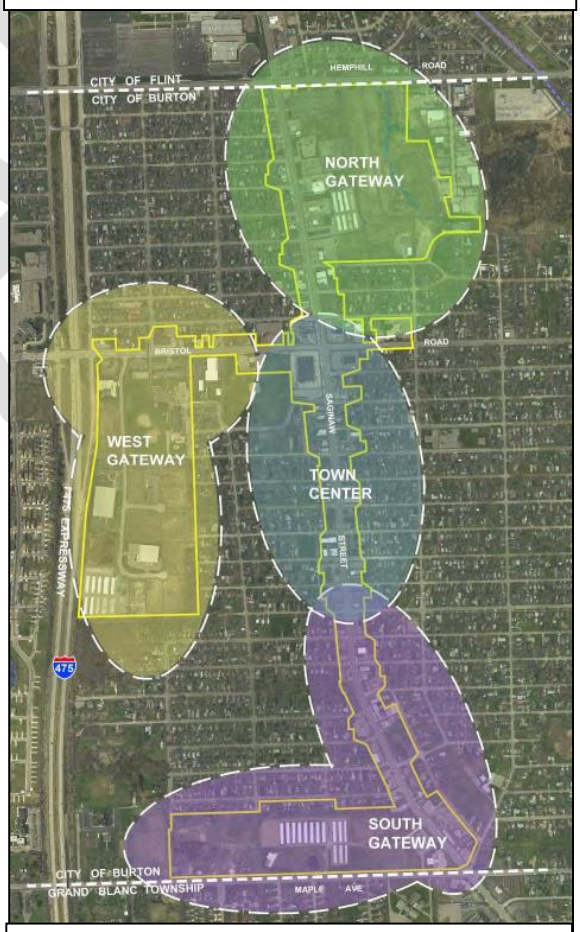
**Goal # 4) Eliminate blighted and/or vacated buildings and land:**

Establish an allocation of the City's CDBG funds for removal of blighted structures.

Encourage and promote the repurposing of vacant or marginally used buildings and properties for attractive, community based office, service, and commercial uses.

The plan proposes three gateways (North, West, and South) that lead to the Town Center on Saginaw Street (Map 5-2). All gateways include some or all elements

***Map 5-2: DDA District Exiting Land Uses***




Map 5-2: Location of the different gateways and town center in City of Burton's DDA district. *Source: DDA Visioning Plan and Guide Book pgs 4.2*

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of infill development, rehabilitation, connection to other non-motorized transportation, pedestrian cross over, street lighting, banners, distinctive landscaping, traffic study, and street calming tactics.

Figure 5-2: Collage of photos from DDA Visioning Plan and Guide Book. Pgs 3.4, 3.6, and 4.3

The plan recommends the development at these gateways and prominent intersections to be highlighted using three or more of features such as public art, unified signage, monuments, special landscape treatments, open space/plaza, water feature, special paving or surface treatment, unique pedestrian scale lighting or bollards, and flags or banner pole groupings. Other design details include pedestrian and vehicle oriented street fronts along the street Right-Of-Way (ROW). Design guidelines on gateways, pedestrian & other non-motorized connection, landscaping, lighting, site furnishings, signage/ wayfinding, walls & fences, screening equipment, and building facades. These features come together to give a highly visible pedestrian and car friendly zone that businesses and their patrons will enjoy.

### *Implementation*

To create a sense of place through placemaking the plan identifies four crucial elements: government policy and enablement, branding and identity, marketing, promotion, and incentives, and infrastructure and development. The following are some of the major proposed action items under each placemaking element:

**Government policy and enablement include:**

Ordinance update with performance code or overlay district

Develop and adopt a plan and process for future development of the North Gateway at Hemphill Road and Saginaw Street

Develop a policy for elimination of blight and vacant buildings

**Branding and Identify:**

Develop Wayfinding and Signage System Plan

Develop plans and details for gateways

**Marketing, Promotion, and Incentives:**

Develop a comprehensive list of available properties and development sites and promote the opportunities

**Infrastructure and Development:**

Traffic Study of District for feasibility of plan concepts and implantation details



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The Downtown Development Authority for the City of Burton is a crucial part of the community. Their plan is referenced in this Master Plan to highlight the importance of a unified community vision for the City of Burton.

## Parks and Recreation Plan Inventory 2012

The City of Burton developed a Parks and Recreational Master Plan in 2012, which helps to create an understanding of the community's current recreation resources and its vision for the future (Figure 5-3). The plan identifies six (6) city owned parks/facilities, nine (9) public schools' areas with recreational space, 26 private facilities with recreational areas/activities, and two (2) county parks within the City of (Map 5-3). The city owned parks/ facilities are concentrated on the southwest and middle of the city.

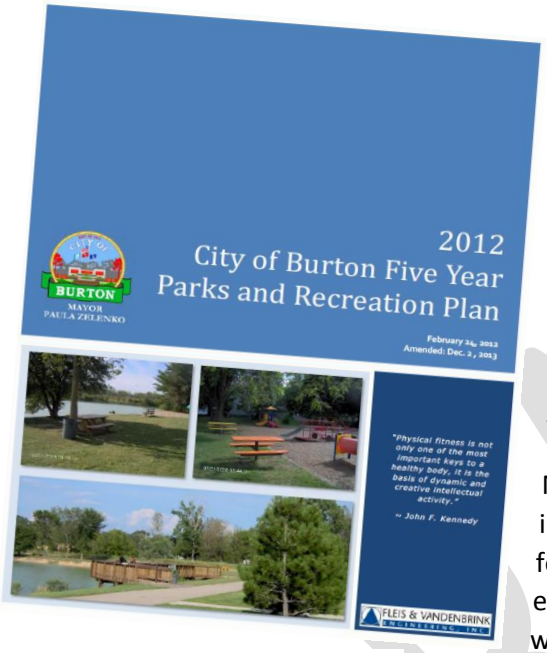


Figure 5-3: Cover of City of Burton Five Year Parks and Recreation Plan

Based on the accessibility rating system there are three parks/facilities that ranked a four (4) where "the entire facility/park meet accessibility guidelines" (Table 5-1). There are two parks that ranked three (3) where "most of the facilities/park areas meet accessibility guidelines." Settlement Park had the lowest at a ranting of one (1) where "none of the facilities/park areas meet accessibility guidelines."

Many of the different amenities within the parks and facilities include: classrooms, lounges, pavilion, picnic tables, drinking fountains, historical/cultural memorial site, playground equipment, fishing spots, location for canoeing/kayaking, wildlife viewing/education, etc.

The public schools and private facilities are located through the city provides a diversity of recreational activities for residents and visitors to the city. The amenities range from sporting venues and playgrounds to bowling, martial arts, golf courses, fitness centers, and much more.

The two county parks are located on the north side of the city; For- Mar Nature Preserve and Arboretum and Davison Roadside Park. For- Mar Nature Preserve and Arboretum includes amenities such as hiking trails, cross country skiing/snow showing, nature preserve, arboretum, DeWaters Education Center, Corydon E. and Foote Bird Collection. The Davison Roadside Park includes a pavilion, playground equipment, picnic areas/grills, and

***Table 5-1: Parks and Recreation Master Plan Accessibility Rating***

| Accessibility Rating | Definition |
|---|---|
| 1 | None of the facilities/ park areas meet accessibility guidelines |
| 2 | Some of the facilities/ park areas meet accessibility guidelines |
| 3 | Most of the facilities/ park areas meet accessibility guidelines |
| 4 | The entire facility/ park meet accessibility guidelines |
| 5 | The entire facility/park was developed/renovated using the principle of universal design |

Table 5-1: This explains the accessibility ratings 1-5 and the corresponding definition. *Source: Five Year Parks and Recreation Master Plan pg 6*



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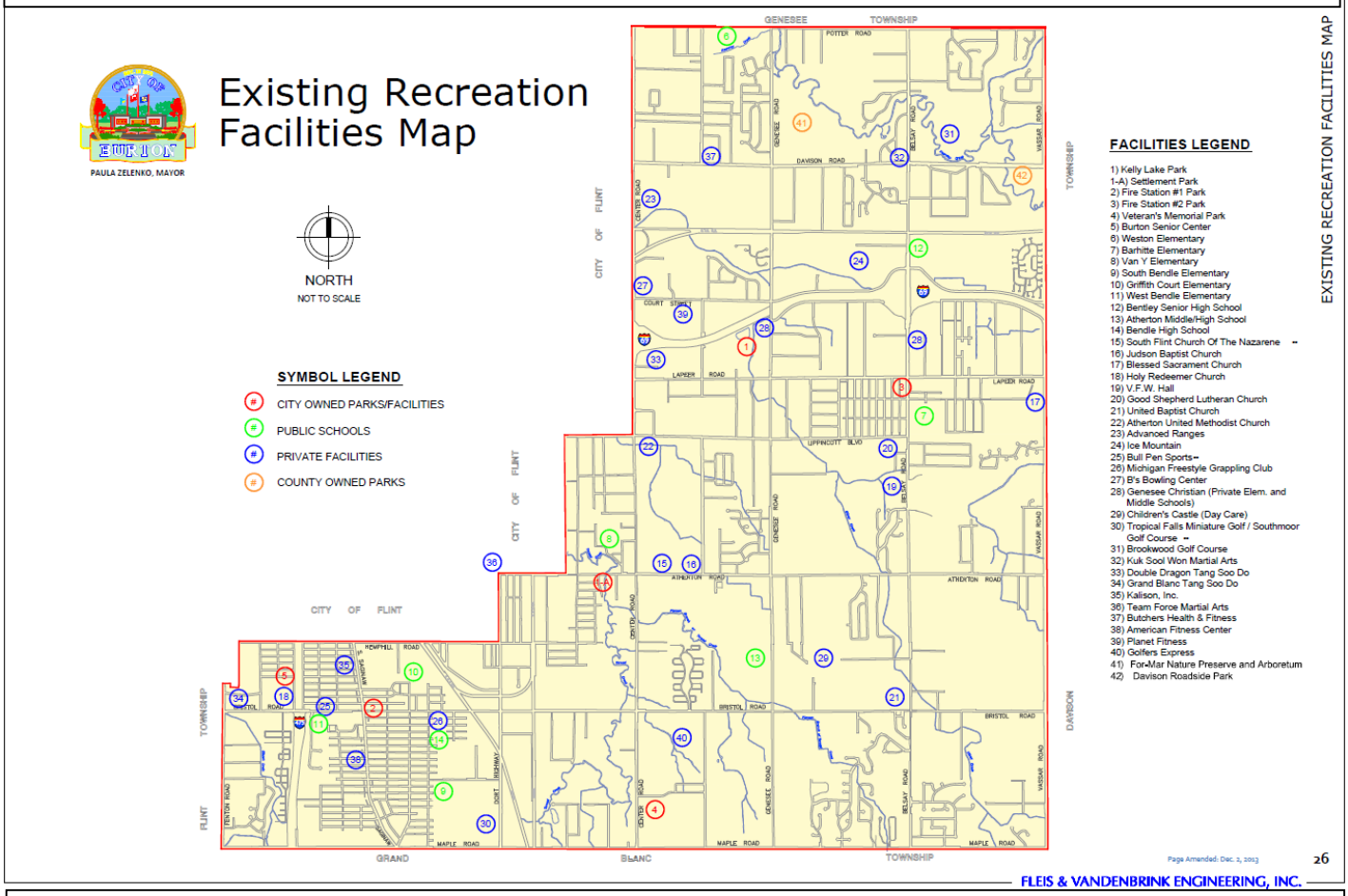
sledding area. The evaluation of parks and recreation services located within the city is thorough and serves various areas of the community with different opportunities, but there is always room for improvements.

***Map 5-3: Parks and Recreation Master Plan Existing Recreation Facilities Map***




Map 5-3: In the City of Burton these are the existing recreation facilities that are city owned, owned by public schools, private facilities, and county owned parks. *Source: Five Year Parks and Recreation Master Plan pg 6*

## *Goals and Objectives*

The heart of the Parks and Recreation Master Plan is the statement of goals and objectives. There are five major goals within the plan with several objectives some of them listed below with the corresponding goal (pg 34):

1. **Continue to improve upon existing parks to better serve the recreational needs of the community for safe, accessible, fun, educational, and economical opportunities to all residents.**
    a. Pursue opportunities to develop the recently named Settlement Park for passive recreational uses and serve as a safe, accessible neighborhood park to those residents in the southern portion of the community.



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2. **Develop a system of non-motorized recreational and transportation networks that will safely link the City's residential areas with schools, parks, commercial areas, and adjacent communities.**
    a. Establish a Burton Trail Coalition that will focus strictly on development and advocacy of non-motorized pathways within the City and form alliances with adjoining communities.
    b. Develop a detailed non-motorized pathway plan to identify potential sub connector routes off the primary pathway routes that connect neighborhoods, recreation, commercial venues, and adjoining communities by way of pathways, sidewalks, and bike lanes incorporating complete streets policies and universal access methods.
    c. Consider implementing a complete streets policy for new infrastructure projects.
    d. Collaborate with schools to participate in the safe routes to school (SR2S) program.
    e. The City will continue to actively pursue acquisition and/or use easements on privately owned property, whenever practical, particularly in areas currently sited for pathway development.
3. **Enhance quality of life by expanding on the City's current park system through preservation of open space and development of new facilities in a cost effective manner that are safe, accessible, responsive to the needs of the community, and geographically serve a broader range of residents.**
    a. Investigate opportunities to assist the Friends of the Memorial Library group with development of a new children's garden park on library property.
    b. Develop a new community park at the property behind VG's Grocery Center (currently referred to as "Burton City Park"). Seek out funding options for design and construction based on the conceptual layout included in this plan.
    c. Review properties recently acquired by the City for the best candidates to create mini neighborhood parks. Secure those properties for future park development.
    d. Investigate opportunities to expand, both geographically and recreationally, on Settlement Park as a linear greenway park along the Thread Creek corridor connecting and partnering with Grand Blanc and City of Flint Communities.
4. **Expand on current programming by coordinating schools and with other public agencies, private recreational providers, citizens groups, and other organizations to offer a wide range of recreational, educational, and enrichment programs to its residents.**
    a. Partner with local groups (ie: library, For-Mar, private organizations, and adjacent communities) by including them in monthly meetings and continued communication with the Park Director.
    b. Assess programs and events currently offered throughout the region and coordinate and expand on programming through the City and schools to fill in the gaps based on the needs of residents.
5. **Increase public awareness of the City's park system and programs through marketing that effectively informs residents of opportunities to all ages and lifestyles.**
    a. The Parks Director shall coordinate with the Public Access Committee to continually update the City's website with current park information including programs and events.
    b. Reach out to the chamber of commerce, schools, senior center, library, Kiwanis and rotary groups, and local newspapers and TV stations to post park information via social media.

Many of the objectives involve the expansion of green space/ park/ recreation space within the community. There recommends for a non-motorized transportation plan (Map 5-4) to create a network



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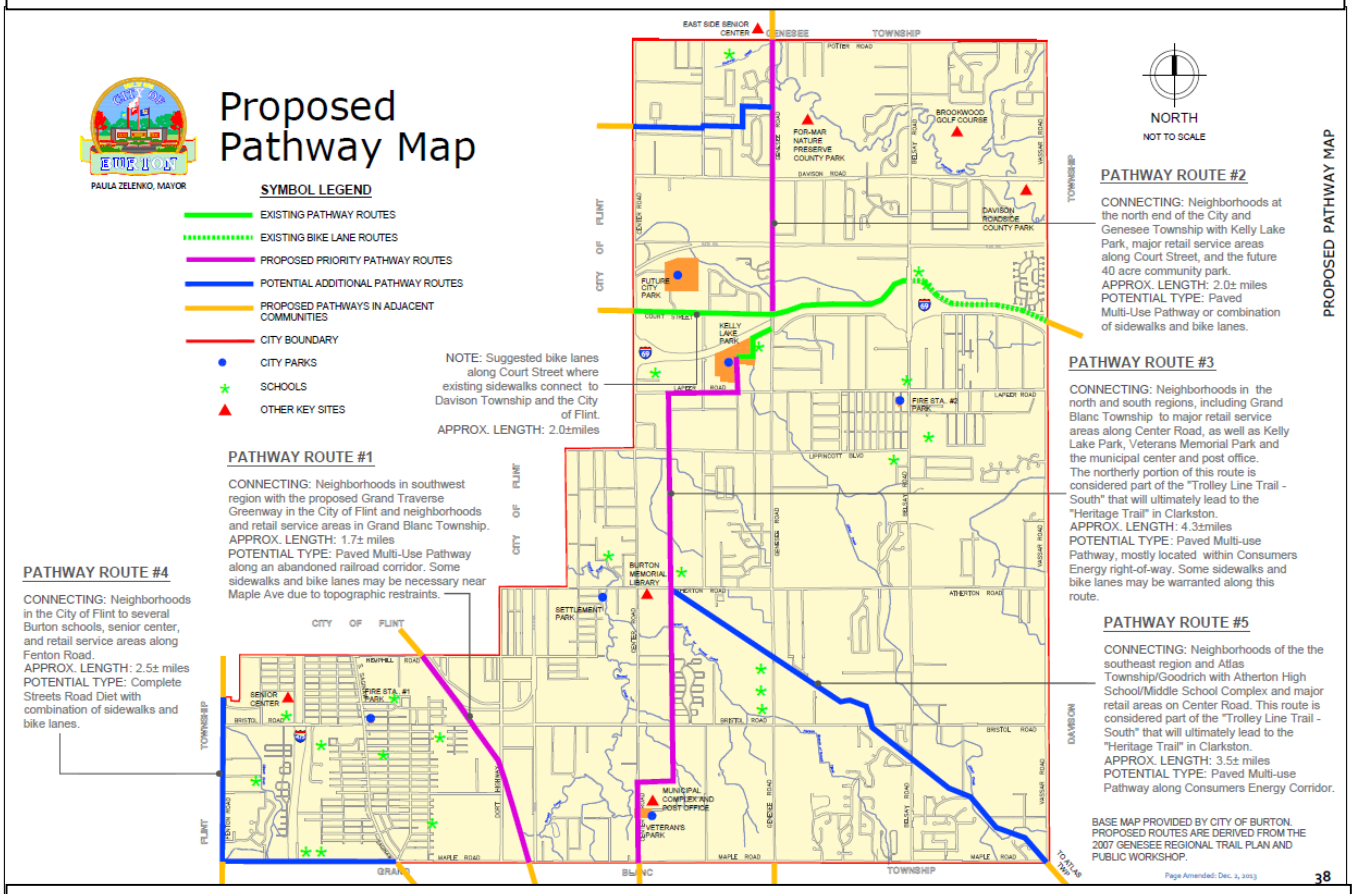
within the community via sidewalks and bike lanes/paths between major community nodes such as schools and other park areas.

***Map 5-4: Parks and Recreation Master Plan Proposed Pathway Map***




Map 5-4: In the City of Burton these are proposed pathways for pedestrian traffic. *Source: Five Year Parks and Recreation Master Plan pg 38*

### *Action Program*

The plan also includes a set of specific improvements in its Action Plan section. This Action Plan includes a five-year capital improvement schedule and financing mechanisms. A simplification of three top priorities for the community can be condensed into three general statements (pg 41):

- All City owned parks are in need of some form of improvements, where Kelly Lake is rated the highest used.
- Developing pathway networks was rated highest amongst its residents. The most desired pathways included nature trails and sidewalks.
- Address the rising demand for recreation spaces by developing new parks that serve broader areas of the city.

These three main statements incorporated within the Parks and Recreation Master Plan can be echoed into the City of Burton Master Plan that can be used for further investigation and inclusion into goals and objectives for the whole community. Considerations of the Action Plan's Capital Improvement Plan



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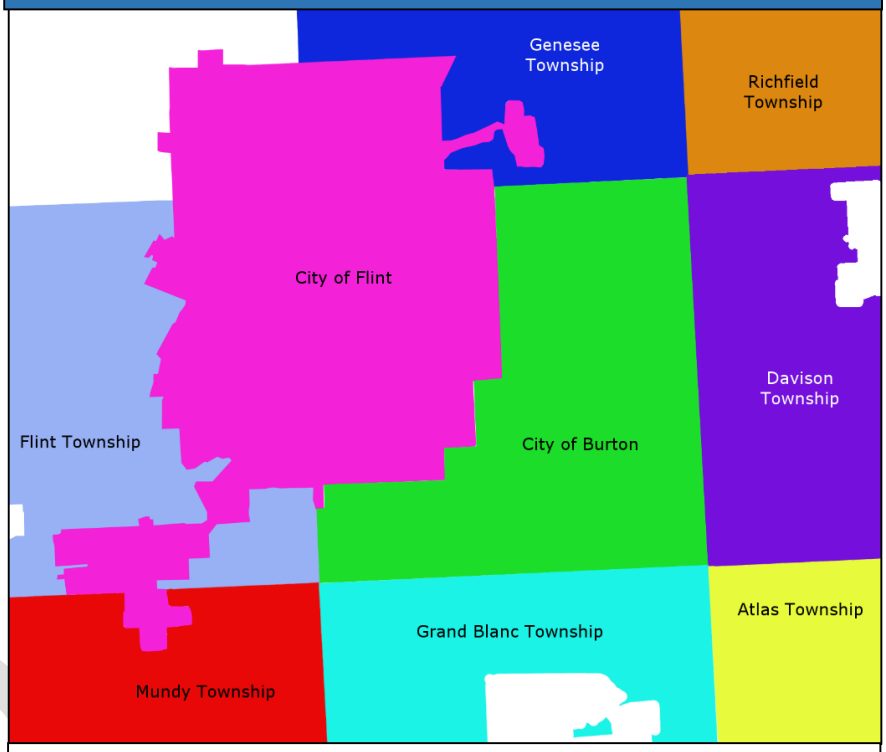
(CIP) recommendation should also be part of the Master Plan's CIP prepared as part of the Master Plan Implementation Section.

## City of Burton Master Plan – Master Plans in Adjacent Communities

Just beyond the borders of the City of Burton are many municipalities that have their own plan within their boundaries. To help elevate any incompatible uses there is an inventory of adjacent communities' master plans and what their future land use map shows. These municipalities include Genesee Township, Richfield Township, Davison Township, Atlas Township, Grand Blanc Township, Mundy Township, Flint Township, and City of Flint shown in Map 5-5.

***Map 5-5 : Neighboring Municipalities, 2010***




Map 5-5: These are the neighboring municipalities to the City of Burton. *Reference: Center for Shared Solutions and Technology Partnerships, Michigan Department of Technology, Management, and Budget*

### *City of Flint*

The City of Flint adopted a new master plan in 2013, the first new master plan in 53 years. The plan's overarching goal is "The City of Flint will be a community made up of distinct and desirable places by integrating a wide range of land uses into a city patter that is vibrant, sustainable, livable, and healthy."

The plan uses "place typology" rather than the tradition land use classifications in expressing the future land use of the city. These consist of a combination of primary and complimentary land uses, development scales and character to provide a "development palette for each area of the city.

The City of Flint borders the City of Burton on its western border starting on Center Road, south to Lippincott Blvd, the south along a line west of Term St, then west along Atherton Road, south on Dort Highway, and west along Hemphill Road ending at Fenton Road.

The area is a mix of five of the twelve place types in the city's master plan shown in Map 5-6. They are:

**Production Center** – The primary location for this place type is at the intersection of Robert T Longway Blvd and Center Road where access to railroads have supported industrial development. The place type designates the city's major industrial centers and economic generators.

**Commerce & Employment Center** – The areas with this designation is south of Robert T Longway Blvd, at the Center Road/I-69 interchange and along Saginaw Street north of Hemphill. This area is



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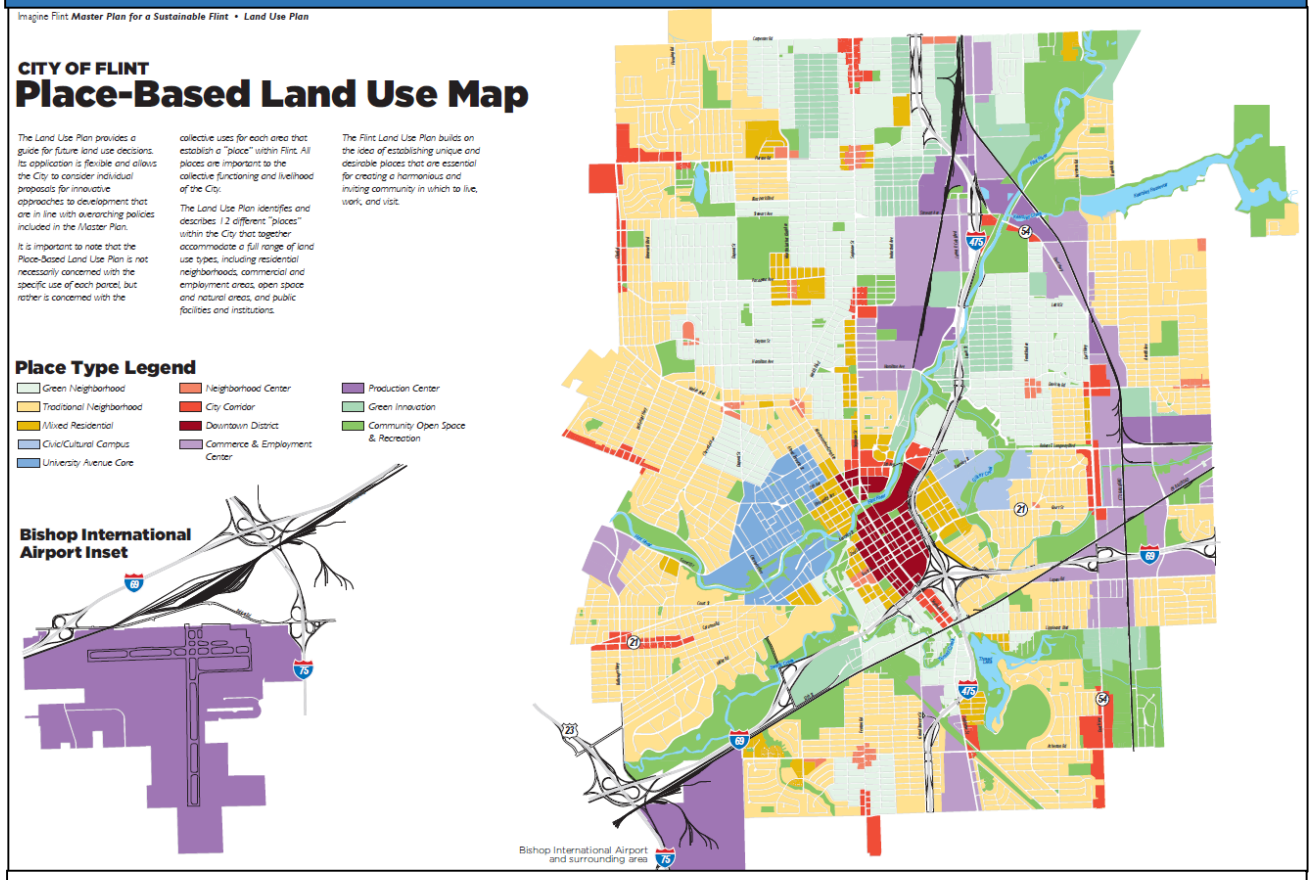
characterized by development patterns focused around a community anchor such as a large employer and/or regional commercial center or a cluster of small employment-related uses. Housing may be located in the area, but as a complementary use such as workforce housing.

**Community Open Space and Recreation** - This place type is scatters throughout the border area, including abandoned railroad right-of-way and some residential neighborhoods with high rates of abandonment. This is an area planned for parks, open space, and environmental features such as greenways, and large wooded areas.

**City Corridor** – This place type is located along Dort Highway where it enters the City of Burton. City Corridors are designed to accommodate a wide range of commercial and institutional uses fronting on major roadways. They are auto-oriented in nature, but with amenities such as sidewalks, benches, pedestrian-scale lighting, and landscaping to make easy for pedestrians to walk along the corridor.

**Traditional Neighborhood** – This place type covers the remaining border area consisting of existing residential neighborhoods. This area is planned to remain primarily single-family detached residences, with townhouses, duplexes, and small multi-family buildings located along busy corridors and areas of special interest.

***Map 5-6 : City of Flint Land Use Plan, 2013***




Map 5-6: This is the land use map for the City of Flint.
*Reference: City of Flint Master Plan*



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*Flint Township*

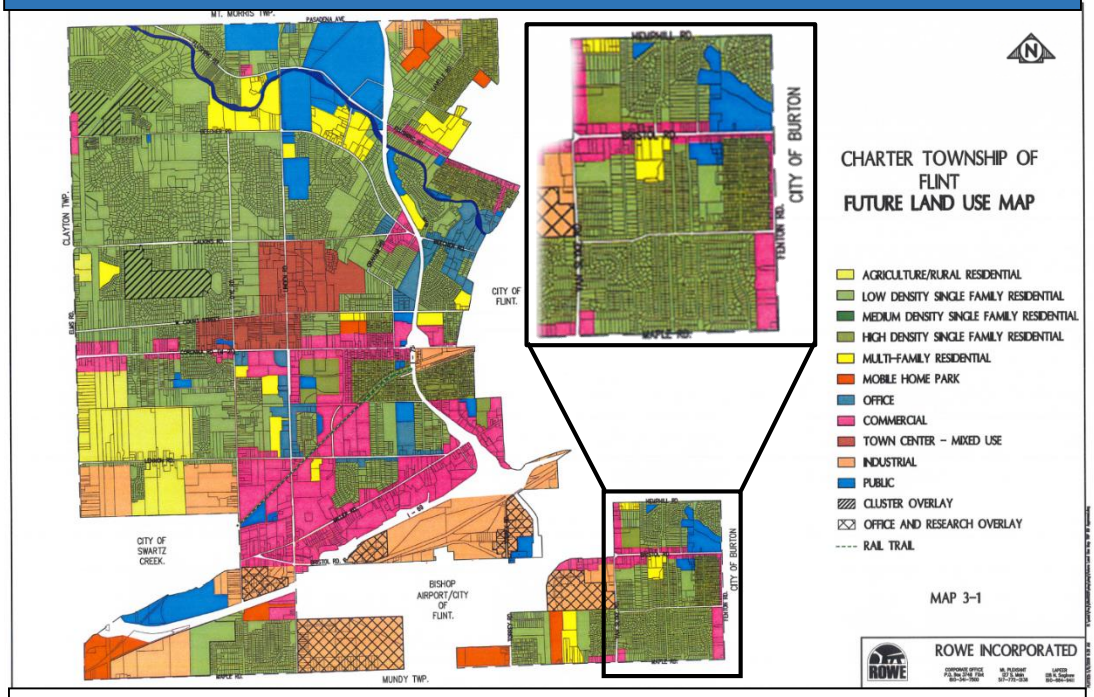
The Charter Township of Flint adopted a Master Plan in 2009, replacing a plan adopted in 1994. Flint Township borders the City of Burton from just south of Hemphill Road to Maple Avenue along Fenton Road. The border area contains three future land use categories shown in Map 5-7:

**High Density Single Family Residential** – This designation covers land fronting on Fenton Road from Hemphill to Bristol and areas behind the commercial land fronting the remainder of Fenton Road. The High Density Single Family Residential classification corresponds with the township's R-1D zoning district, which allows single family residences on 7,200 sq. ft. lots. It is intended to identify existing single family residential neighborhoods where density corresponds with the R-1D zoning district. The classification is also available for spot infill developments to promote affordable housing and address difficult to develop sites. This area would also allow for increased flexibility in the range of home occupations allowed

**Public** – This classification designates land adjacent to Fenton and Bristol Road. The Public classification has no corresponding township zoning classification. Land in this classification is zoned based on the intensity and impact of the use and as mapped represent existing public uses or vacant land that is publicly owned.

**Commercial** – The Commercial classification covers land fronting on Fenton Road from Bristol Road to Maple Avenue. It corresponds with the township's C-1, C-2 and C-3 zoning districts. The three districts vary in the range of services allowed, from office and neighborhood commercial, drive thru restaurants, car dealerships and regional commercial centers. The focus of the Township plan is development of a proposed Town Center area and not on expansion of its existing commercial corridor such as along Fenton Road.

***Map 5-7 : Flint Township Future Land Use Plan, 2009***




Map 5-7: This is the future land use map for the Flint Township.
*Reference: Charter Township of Flint Master Plan*



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*Grand Blanc Township*

The Grand Blanc Community Master Plan was adopted in 2010, replacing a plan adopted in 2003. The township borders the City of Burton along its southern boundary of Maple Avenue. Generally, the western half of that area is a mix of single family and multiple family residences, light industrial and commercial land uses, while the eastern half is almost completely low density single family residences. There are eight future land use categories identified in the area long Maple Avenue shown in Map 5-8:

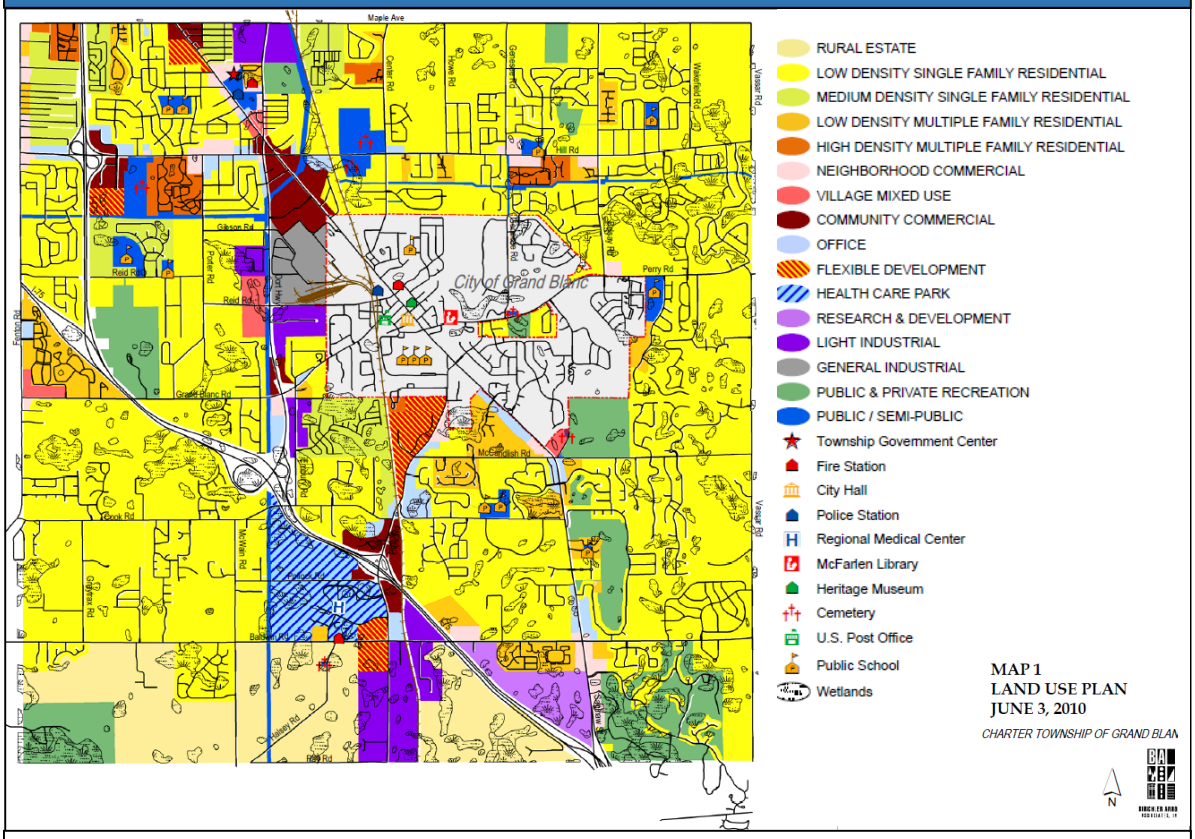
**Low Density Single Family Residential**. – As noted, this designation covers over half of the border area and is designed to provide for single family development with densities ranging from 1.7 to three (3) dwelling units per acre to accommodate suburban subdivision style development.

**Medium Density Single Family Residential**-- This designation includes a few existing residential developments fronting on Maple Avenue. It provides for smaller lot single family subdivisions with densities ranging from 3.1 to 4 dwelling units per acre are anticipated within this land use category.

**Low Density Multiple Family Residential**- This future land use designation covers one development with frontage on Maple Avenue. It provides for multiple Family development at densities of 4 to 10 dwelling units per acre include townhomes, courtyard apartments and attached condos.

**High Density Multiple Family Residential**- There are to areas identified as High Density Multiple Family Residential in the border area, one adjacent to Center Road and the other just east of Fenton Road. This

**Map 5-8: Grand Blanc Township Land Use Plan, 2010**




Map 5-8: This is the land use map for the Grand Blanc Township.
*Reference: Grand Blanc Township Master Plan*



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category is the Township plan's most intense concentration of residential development with permitted densities ranging from 10.1 to twenty (20) dwelling units per acre. Rental apartments and attached condominiums would represent typical development types within these areas.

**Neighborhood Commercial**- This land use category is located at the intersection of Maple Avenue and Fenton Road and is intended to encompasses small commercial/retail uses that serve the convenience consumer needs of nearby residential neighborhoods. Uses may include drug stores, florists, beauty salons, and modest-sized grocery stores.

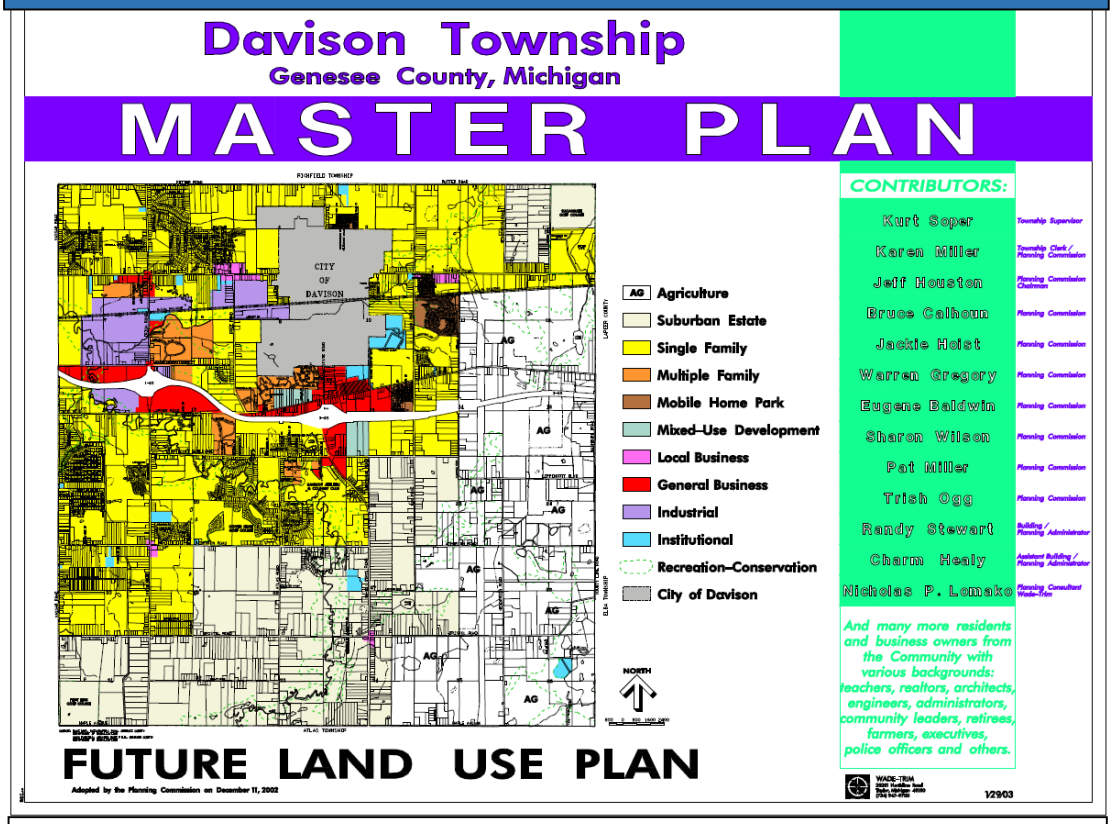
**Community Commercial**- Land at the intersection of Maple Avenue and Saginaw Street is covered by this designation. It covers larger, community commercial centers and highway-oriented businesses

**Light Industrial**- The intersection of Dort Highway and Maple Avenue is designated Light Industrial. This land use classification is intended to accommodate office, light industrial, warehousing, and research and development uses. Development is expected to occur within an integrated planned environment with no outdoor storage permitted and adequate buffering of adjacent residential uses.

### *Davison Township*

The Davison Township Master Plan was adopted in 2003, replacing a plan adopted in in 1988. The township is adjacent to the city's eastern border of Vassar Road. The townships Future Land Use Plan shows four land use categories within the border area shown in Map 5-9:

**Map 5-9: Davison Township Future Land Use Plan, 2003**




Map 5-9: This is the future land use map for the Davison Township.
*Reference: Davison Township Master Plan*



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**Single Family** – This classification covers the vast majority of the land adjacent to Vassar Road. It covers both existing proposed single family residential development at subdivision level densities.

**Suburban Estate** – This classification covers the southernmost mile of the border area. The existing and proposed development is single family residential at very low densities with some provision for agricultural and ancillary uses.

**General Business** – The general business category is located on land adjacent to the I-69/Irish Road interchange and is intended to provide appropriate locations for highway service and "big box" retail establishments.

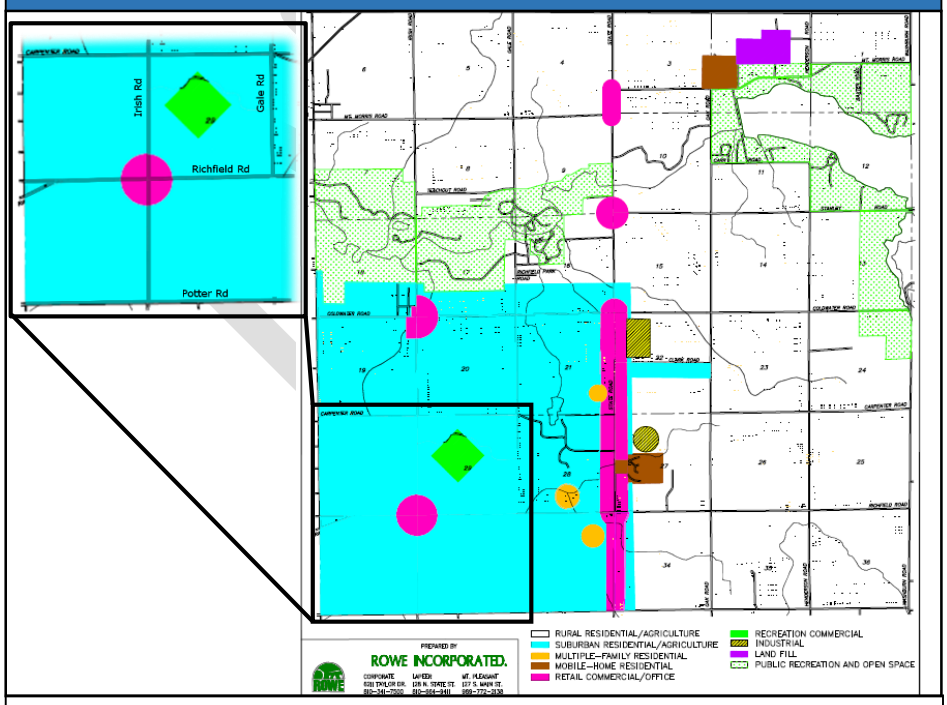
**Industrial** – The industrial future land use classification includes property north and south of the I-69/Irish Road interchange and is intended to prove appropriate locations for industrial uses, particularly those that may take advantage of railroad access.

### *Richfield Township*

The Richfield Township Master Plan was adopted in 2005, updating a previous plan adopted in 1995. The township is located "kitty-corner" from the city at the intersection of Vassar and Potter Roads. The land in Section 31 of the township is designated as Suburban Residential/Agricultural shown in Map5-10.

**Suburban Residential/Agriculture** – This future land use classification is defined by the township's sewer service area and is intended to accommodate most of the new residential development that will occur in the township for the foreseeable future. The minimum single-family lot size in the suburban residential area is intended to be 12,000 square feet, but it is anticipated that some residential development will occur on acreage parcels. Although the suburban residential area is intended to provide primarily for single-family homes, certain sites within this general area are suitable for multiple-family residential development. It is also anticipated that "temporary" nonresidential uses will continue within the suburban residential area over the next two decades. Such uses include agricultural and extractive activities.

**Map 5-10: Richfield Township Future Land Use Plan, 2005**




Map 5-10: This is the future land use map for the Richfield Township.
*Reference: Charter Township of Richfield Master Plan*



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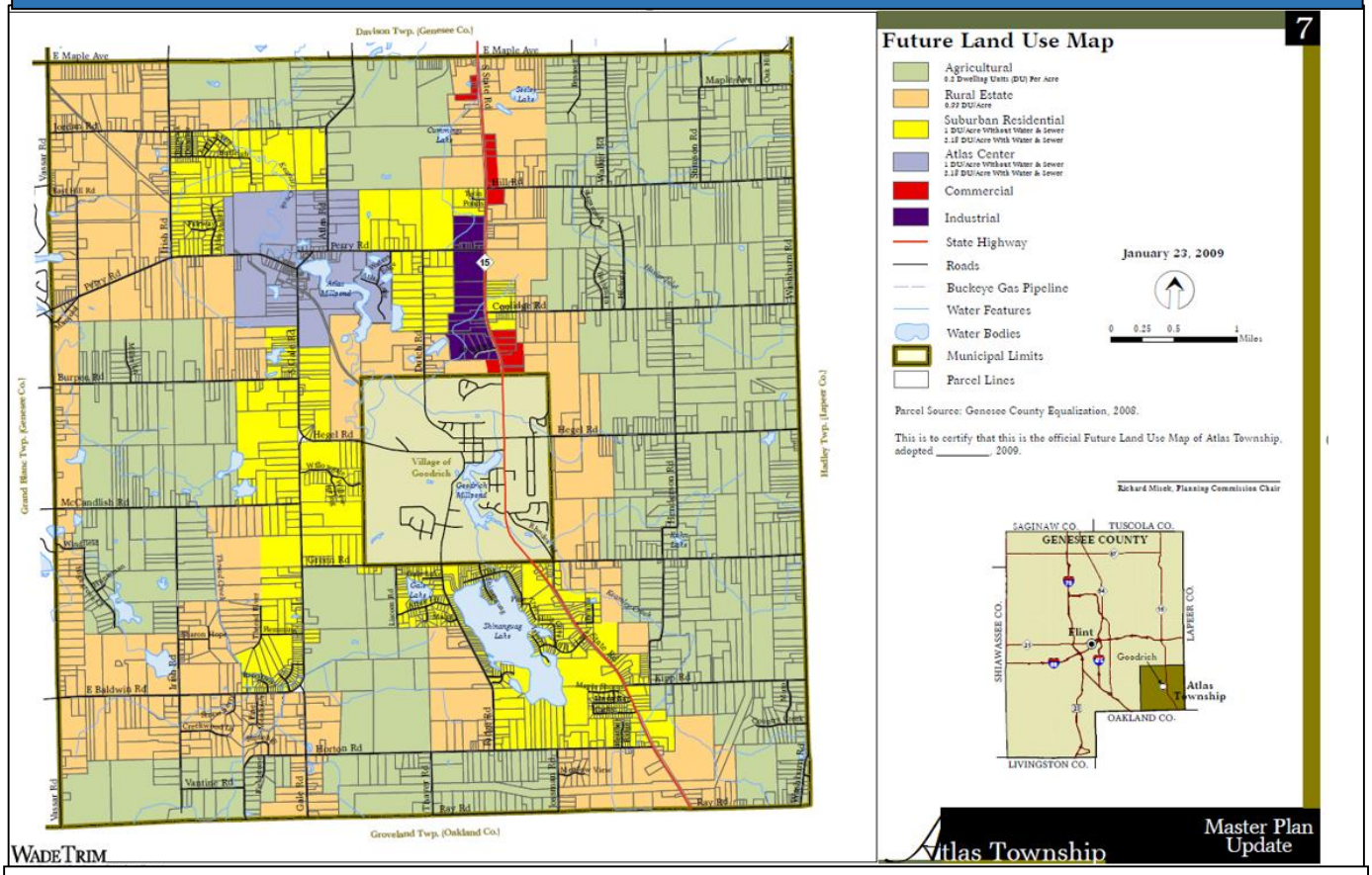
### *Atlas Township*

The Atlas Township Master Plan was adopted in 2009, replacing a previous plan adopted in 1991. The township is located "kitty-corner" from the city at the intersection of Vassar Road and Maple Avenue. The land in Section 6 of the township is designated as Rural Estate shown in Map 5-11.

**Rural Estate** – The Rural Estate land use is intended to maintain a predominantly rural character, and exclude the proliferation of residential subdivisions and suburban sprawl. Single-family uses are encouraged to be designed using clustering techniques to preserve agricultural lands, environmentally significant lands and other open spaces. In addition to agricultural and single-family residential uses, a limited amount of support services, such as churches or schools, may be appropriate, but will be limited by the lack of public water and sewer services within the category. A minimum lot area of 3 acres is recommended for the Rural Estate category.

**Map 5-11: Atlas Township Future Land Use Plan, 2009**




Map 5-11: This is the future land use map for the Atlas Township.
*Reference: Atlas Township Master Plan*



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*Mundy Township*

The Mundy Township Master Plan was adopted in 2011, replacing a previous plan adopted in 1997. The township is located "kitty-corner" from the city at the intersection of Vassar Road and Maple Avenue. The land in Section 1 of the township is designated as a mix of four land use classifications, which are as follows shown in Map 5-12:

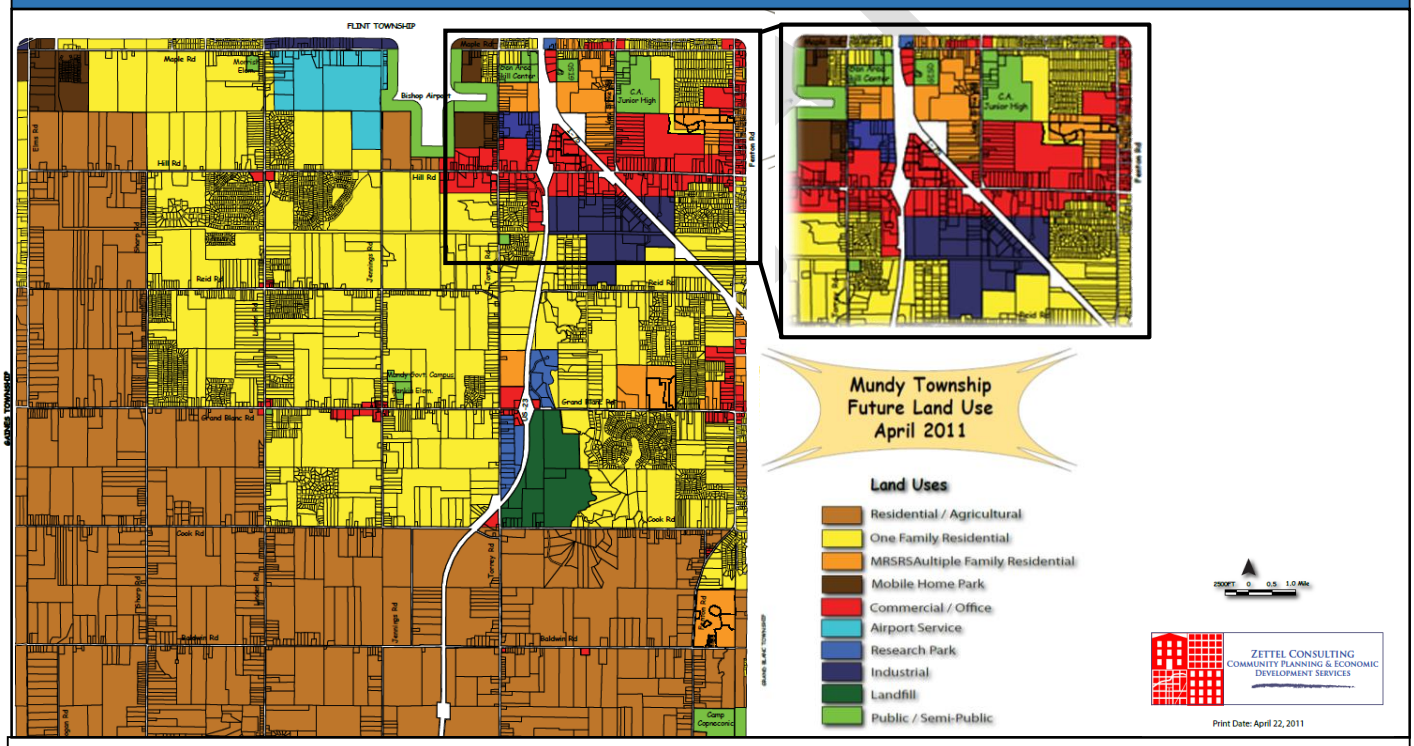
**One Family Residential** – This designation covers approximately a quarter of the section. It is intended to provide areas for suburban style, one-family residential development and other types of uses that provide services which will complement the principal uses such as golf courses, athletic fields, churches, day-care facilities, and small scale elderly housing. Lot sizes vary from ½ acre to 2 acres.

**Multiple Family Residential** – The multiple-family residential classification covers an existing multi-family development off Fenton Road. The classification is intended to provide opportunities for affordable housing and alternatives to traditional subdivision development.

**Commercial/Office** – The commercial/office classification cover the full range of commercial and office uses allowed in the township although the current uses include a drive-in theatre and grocery store.

**Public/Semi-Public** – This category generally reflects the existing public and semi-public land uses in the Township and designates an existing Carman Ainsworth school.

**Map 5-12: Mundy Township Future Land Use Plan, 2011**




Map 5-12: This is the future land use map for the Mundy Township.
*Reference: Mundy Township Master Plan*

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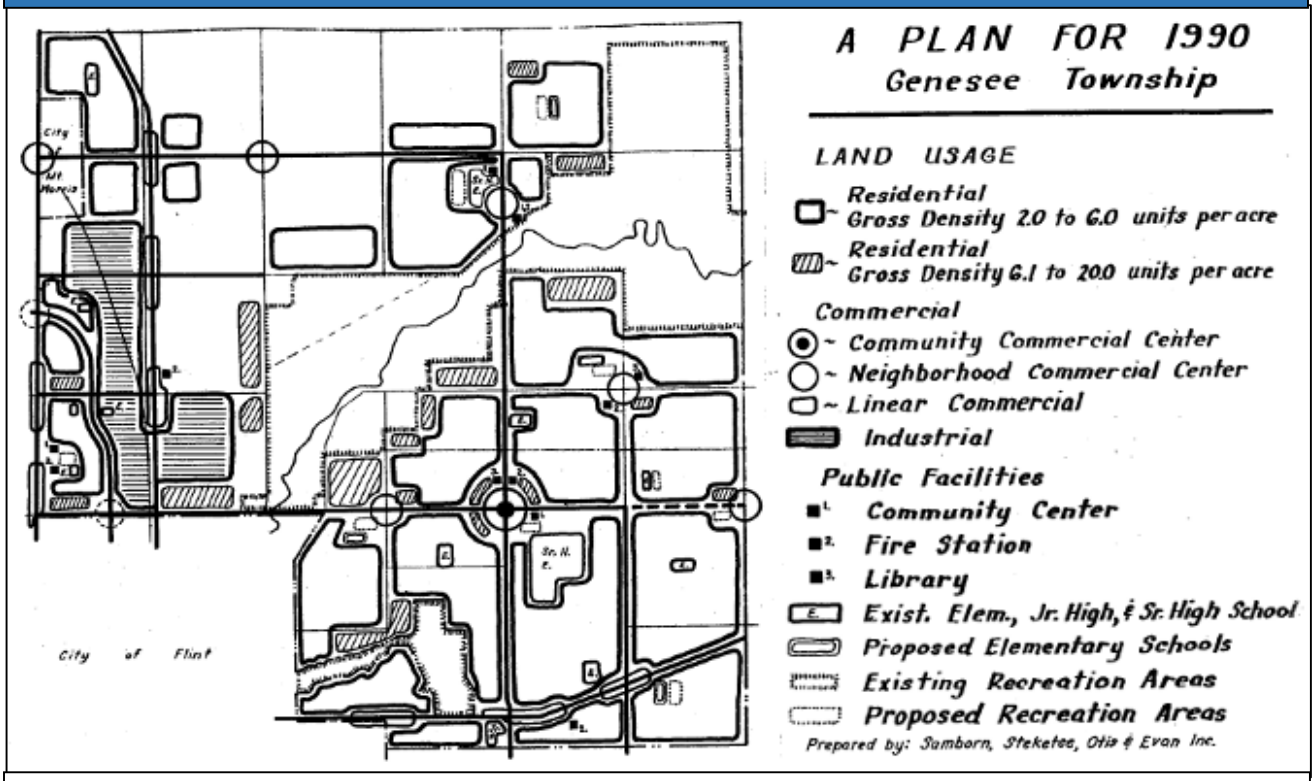
*Genesee Township*

The Genesee Township Master Plan was adopted in 1990, replacing the 1975 zoning districts. Genesee Township is located north of the City of Burton along E Potter Road, Potter Road, and N Center Road. The neighboring land usages are residential gross density 2.0 to 6.0 units per acre, one Jr. High School, and one fire station shown in Map 5-13.

**Map 5-13 : Genesee Township Land Use Plan, 1990**




Map 5-13: This is the future land use map for the Genesee Township.
*Reference: Genesee Township Master Plan*

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# Chapter 6. Target Market Analysis

This chapter includes a few pages including the introduction, executive summary and summary of Market Potential of the Target Market Analysis by Sharon Woods CRE of LandUse USA. To view the whole Target Market Analysis reference _____. In conjunction with the Target Market Analysis, review the East Michigan Prosperity Region 6 Regional Workbook for a better understanding of the Target Market Analysis report reference ___.

## Introduction

Through a collaborative initiative by its planning division, planning commission, and city council, the City of Burton has undertaken development of a new city-wide master plan. To complete this endeavor, the city has hired Rowe Professional Services Company (www.rowepsc.com), who in turn has invited LandUseUSA to conduct a market study as part of the process and deliverables. The objective of this study is to identify and measure the market potential for economic, retail, and residential growth throughout the city; and results will be used to guide the master plan.

This document presents the findings and recommendations from the residential study, and follows a Target Market Analysis approach that has been endorsed by the Michigan State Housing Development Authority. The work approach is also supported by the Michigan Economic Development Corporation and its Community Development division. However, this study it has not been funded by a matching grant from the state, and instead has been exclusively funded by the City of Burton.

This Executive Summary highlights the results for the City of Burton, with comparisons to Grand Blanc, Flint, and other neighboring places. It is followed by a more complete explanation of the market potential for attached units under conservative (minimum) and aggressive (maximum) scenarios, with a focus on the City of Burton.

## Executive Summary

High Internal Movership Rates – Results are based on internal migration within each place; movership rates by tenure and lifestyle cluster; and housing preferences among target market households. Based on these factors, existing households in Burton are turning-over the current supply of units at an exceptionally high rate. Movership rates in Burton are exceeded only by that of larger metropolitan cities like Detroit, Flint, and Muskegon. These markets all have relatively low-to-moderate incomes; and their renters frequently move while striving for a higher quality-of-life. In Burton, they are predominately “Dare to Dream”, “Digital Dependents”, “Hope for Tomorrow”, and “Family Trooper” target markets. These groups are motivated in their search for quality housing; and they respond well to placemaking amenities, recreational and entertainment venues, and downtown reinvestment into mixed-use projects.

Improve Existing Housing Stock – An important goal for Burton is to renovate, restore, refurbish, and remodel existing housing stock in a manner that meets the needs of its existing residents. The goal is to slow down the turn-over rate among existing households by providing adequate and attainably-prices rental units that they are slower to vacate.

Intercept Upscale Targets – A second key strategy is for Burton to add new housing choices (particularly townhouses, flats, and lofts) that meet the expectations and preferences of new households that are moving into Genesee County. Burton is already doing a good job of intercepting new “Family Trooper”



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and "Dare to Dream" households, but is not keeping up with Grand Blanc in intercepting "Striving Singles", "Bohemian Groove", and "Digital Dependent households.

## Summary of Market Potential

Maximum Market Potential – Based on the Target Market Analysis results for an aggressive scenario, there is a maximum annual market potential for up to 784 attached units throughout the City of Burton, plus 938 detached houses (for a total of 1,722 units). The market potential for 784 attached units includes 190 units among duplexes (which may include subdivided houses); and 594 units among other formats like

Summary Table A

Annual Market Potential – Attached and Detached Units

Renters and Owners – Aggressive (Maximum) Scenario

The City of Burton and Nearby Places – 2016

| Annual Market Potential Aggressive Scenario | Detached Houses | Attached Duplex Triplex | Attached Larger Formats | Total Potential |
|---|---|---|---|---|
| The City of Burton | 938 | 190 | 594 | 1,722 |
| Format as a Share of Total | 55% | 11% | 34% | 100% |
| Grand Blanc Township | 922 | 299 | 1,886 | 3,107 |
| Format as a Share of Total | 30% | 10% | 60% | 100% |
| The City of Grand Blanc | 194 | 61 | 657 | 912 |
| Format as a Share of Total | 21% | 7% | 72% | 100% |

townhouses, row houses, lofts above street-front retail, stacked flats arranged around courtyards, multiplexes, and midrise buildings.

Grand Blanc Township and City – Migrating households seeking attached units are also inclined to choose Burton's neighboring places, and particularly Grand Blanc Township and the City of Grand Blanc, which are both located to the south. Assuming that Burton wants to intercept households that might otherwise choose these other places, then it will need to build new attached units that meet household needs and expectations.

Missing Middle Typologies – Throughout the East Michigan Region (Prosperity Region 6) and Genesee County, each place is unique with varying degrees of market potential across a range of building sizes and formats. Results of the analysis are intended to help communities and developers focus on Missing Middle Housing choices (see www.MissingMiddleHousing.com for building typologies), and particularly fourplexes; townhouses and row houses; stacked flats arranged around courtyards; and lofts above street-front retail.

Implementation Strategies – Depending on the unique attributes and size of each place, a variety of strategies can be used to introduce new housing formats.



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Missing Middle Housing Formats – Recommended Strategies

1. Conversion of high-quality, vacant buildings (such as schools, city halls, hospitals, hotels, theaters, and/or warehouses) into new flats and lofts.
2. New-builds among townhouses and row houses, particularly in infill locations near rivers and lakes (including inland lakes) to leverage waterfront amenities.
3. Rehab of upper level space above street-front retail within downtown districts.
4. New-builds with flats and lofts in mixed-use projects, above new merchant space with frontage along main street corridors.
5. New-builds among detached houses arranged around cottage courtyards, and within established residential neighborhoods.
6. The addition of accessory dwelling units like flats above garages, expansions to existing houses with attached or detached cottages, or other carriage-style formats.

Lifestyle Clusters and Target Markets – The magnitude of market potential among new housing formats is based on a study of 71 household lifestyle clusters across the nation, including 16 target markets that are most likely to choose attached units among new housing formats in the downtowns and urban places. Again, the target markets have been selected based on their propensity to choose b) attached building formats rather than detached houses; and a) urban places over relatively more suburban and rural settings.

Within any group of households sharing similar lifestyles, there are variances in their preferences across building sizes and formats. For example, 52% of the "Bohemian Grooves" households, but only 11% of the "Digital Dependent" households will choose attached housing formats. Both groups are among the target markets for the City of Burton and Genesee County.

In general, moderate-income renters tend to have higher movership rates, are more likely to live in compact urban places, and are more likely to choose attached units. However, there are many exceptions and better-income households and owners are also showing renewed interest in attached products.

Across the nation, single householders now represent the majority (albeit by a narrow margin). Households comprised of unrelated members, and multi-generational households are also gaining shares. These diverse householders span all ages, incomes, and tenures; and many are seeking urban alternatives to detached houses.

As shown in the following Summary Table B, 17% of Burton's annual market potential for attached units will be generated by Upscale Target Markets; and 77% will be generated by Moderate Target Markets. A small balance of 6% will be generated by other households that

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are most prevalent in the market. Households in this later group tend to be settled and are less inclined to choose attached formats – if they move at all.

Summary Table B
Annual Market Potential – Attached Units Only
Renters and Owners – Aggressive Scenario
The City of Burton and Nearby Places – 2016

| Renters and Owners Aggressive Scenario Attached Units Only | Upscale Target Markets | Moderate Target Markets | Other Prevalent Clusters | All 71 Lifestyle Clusters |
|---|---|---|---|---|
| The City of Burton | 131 | 606 | 47 | 784 |
| Share of City's Total | 17% | 77% | 6% | 100% |
| Grand Blanc Township | 1,360 | 800 | 25 | 2,185 |
| Share of Township's Total | 62% | 37% | 1% | 100% |
| The City of Grand Blanc | 519 | 199 | . | 718 |
| Share of City's Total | 72% | 28% | 0% | 100% |

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# Chapter 7. Retail Market Analysis

This chapter includes a few pages including the introduction, Saginaw Street Corridor, and Center Road Corridor Retail Market Analysis by Sharon Woods CRE of LandUse USA. To view the whole Retail Market Analysis reference _____.

## Introduction

Through a collaborative initiative by its planning division, planning commission, and city council, the City of Burton has undertaken development of a new city-wide master plan. To complete this endeavor, the city has hired Rowe Professional Services Company (www.rowepsc.com), who in turn has invited LandUseUSA to conduct a market study as part of the process and deliverables. The objective of this study is to identify and measure the market potential for economic, retail, and residential growth throughout the city; and results will be used to guide the master plan. This document presents the findings and recommendations from the retail market analysis, and follows a conventional approach to supply and demand. For documentation purposes, this study it has not been funded by a matching grant from the state; and it has been entirely funded by the City of Northville.

Two Sustainable Shopping Districts – The City of Burton has two discrete shopping districts that each have unique attributes and that could appeal to unique types of retail and businesses. Retail growth is feasible along both corridors, and they can co-exist while sharing the market. The following narrative provides a summary of market observations, work approach, study findings, conclusions, and recommendations; and results are qualified for each of the two shopping districts.

## Saginaw Street Corridor

Saginaw Street Corridor – The first district is the Saginaw Street corridor, which is generally parallel to and east of Interstate 475. Saginaw Street is within the City of Burton from Hempill Road south to Maple Avenue. North of Hemphill Road, Saginaw Street is within the City of Flint; and south of Maple Avenue, it is within Grand Blanc Township [Exhibit A.3].

The Saginaw Street is spanned by a Downtown Development Authority District, and includes a mix of established hardline anchors like Gilroy's Hardware, Winn's Electric, and Rocky's Great Outdoors [Exhibit A.4]. The DDA prepared a Visioning Plan in 2015 [Exhibit A.4], which appropriately identifies a number of gateways and Town Center at the core. The Town Center benefits from the easiest access off I-475, and is best positioned to intercept traffic along Bristol Road. [Exhibit A.5]

Economic Catalyst – The future of Saginaw Street will depend on the City's and DDA's ability to collectively envision a catalyst type of mixed-use redevelopment project that is transformative and impactful for the entire corridor. The project should pivot at the intersection of Center Street and Bristol Avenue, within the Town Center Core. Parcels should be assembled for development of a new project with build-to-suit space for a few of the existing destination stores. Those stores should relocate into the new space, releasing additional parcels along the corridor that can be incrementally redeveloped.

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Retail Gap Analysis – Based on a retail gap analysis [documented in Section D attached to the complete report], there is little or no opportunity for automotive supply shops or for building and garden supply stores. However, other hardline categories and destination stores are supportable and would complement the existing mix of businesses already located along Saginaw Street. These include automotive dealerships; furniture and home furnishings; electronics and appliances; and sporting goods stores.

National Chain Expansions – There are over 20 national chain retailers planning to open new stores across the nation and in Michigan, and might also be a good fit for the Saginaw Street corridor. These include grocery stores like IGA and pharmacies like CVS [Exhibit B.2]; value stores like Dollar Castle [Exhibit B.3]; home improvement stores like Glidden Paint and True Value; value-priced book stores like Half Price Books; sporting goods stores like West Marine; and fitness centers like Gold's Gym [Exhibit B.4].

Leveraging Destination Stores – The established mix of destination businesses along Saginaw Street is primarily among hardline categories [Exhibits B.6 – Exhibit B.10], which are hopefully drawing cross-shoppers from throughout the Greater Flint metropolitan area. Although many of the destination businesses are operating in dated and marginal commercial space, they provide unique products and fill important niches. Examples include Rocky's Motorcycles, Ford Pre-owned Auto Dealership, Gil-Roy's Hardware, Win's Electrical and Lighting, Kirby Vacuum Sales, Custom Pools & Spa, and Genesee Cut Stone and Marble.

The corridor also includes a mix of small convenience types of businesses like salons, drinking establishments, and automotive repair shops; plus vacated commercial space and vacant used car lots. The prevalence of these businesses and vacancies, combined with the dated appearance of commercial buildings in fragmented locations; make it difficult to appreciate the corridor's full retail potential and future.

Business Cluster Analysis – The established businesses along Saginaw Street can be clustered into retail categories to demonstrate themes and identify missing and niche opportunities [Exhibit B.6 – Exhibit B.10]. For example, Rocky's Motorcycles and Great Outdoors could be leveraged by small businesses offering complementary sporting goods – such as a bicycle and skate board shop.

Similarly, the mix of automotive dealerships and auto supply shops could be leveraged to create a destination attraction, such as a vintage auto museum and showroom. The cluster of home improvement and supply stores could be leveraged to add moderately-priced (including consignment) furniture and home furnishings stores.

The cluster analysis also reveals a need for some neighborhood conveniences, including an additional grocery and pharmacy (to offer choices); family entertainment venues; and a full-service fitness center or health club. These observations are also supported by the retail gap analysis, previously mentioned and documented in Section D.

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## Center Road Corridor

Center Road Corridor – The second retail district in Burton is the Center Road corridor, which pivots around a key interchange onto Interstate 69 [Exhibit A.7]. At I-69 (and north of the interstate), the west half of Center Road is within the City of Flint, and east half is within the City of Burton [Exhibit A.2]. At the intersection of I-69 and Center Road, the southwest quadrant [Exhibit A.8] is in the City of Flint and includes Eastridge Commons, which has a T.J. Maxx store and vacant Target Discount. The southeast quadrant is in the City of Burton includes a church and fragmented businesses in a conventional commercial strip format.

Also at the intersection of I-69 and Center Road, the northwest quadrant is in the City of Flint and includes a mix of strip commercial and detached houses in a subdivision. Just north of the Robert T. Longway Boulevard (along Center Street), the former Delphi Flint East plant is being razed to make way for eventual reinvestment.

The northeast quadrant at I-69 and Center Road is in the City of Burton and includes Courtland Center, anchored by JC Penney, Staples, Jo-Ann Fabric, Dunham's Sports, and Planet Fitness. Nearby national chain stores include big-boxes like Art Van, Home Depot, and Lowe's home improvement, all located within the City of Burton. Walmart Supercenter is about two miles east, along Belsay Road and also in the City of Burton.

Regional Overview – Today, most of the destination shopping for the Greater Flint metropolitan area is dominated by national chains along Miller and Linden Roads, about five miles west of Center Street. Center Road and Courtland Center have served as a secondary node and alternative to choices along Miller Road.

Optimal Scenario for Center Street – In the best case scenario, Eastridge Commons is either revived or redeveloped into a new format with new anchors, and continues to generate cross-shopping traffic into Courtland Center. Burton and Flint will both benefit, and shoppers throughout the region will continue valuing the diversity of shopping choices within the region.

Jurisdictional Collaboration – If Eastridge Commons is neglected and becomes completely vacant, then it will have direct negative impacts on the corridor and Courtland Center. Although Eastridge Commons is technically in the City of Flint, it is in Burton's best interest to ensure that it thrives with a new mix of anchors, or that it is redesigned into a new pedestrian-oriented town center. In short, the City of Burton must collaborate with the City of Flint to develop a multi-jurisdictional strategy and plan for all quadrants pivoting around this important I-69 interchange.

Retail Gap Analysis – Based on a retail gap analysis [documented in Section D attached to the complete report], there is little or no opportunity for automotive supply shops; and building and garden supply stores in the City of Burton. However, other categories are supportable and would complement the existing mix of businesses already located in and near Courtland Center and Eastridge Commons. These include clothing and accessories stores; overnight accommodations and hotels; and large-format general merchandise stores, such as Costco.

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National Chain Expansions – Costco membership warehouse club is expanding nation-wide and into Michigan [Exhibit B.2], and has recently announced a new store in the Lansing market. In the Flint market, Center Road is an ideal location, but only Costco can find a site with direct visibility to highway traffic along I-69. There is a real risk that Costco could choose a site in neighboring Flint (such as in a redeveloped Eastridge Commons) – but it would still generate direct benefits for Burton and other retailers along Center Road.

Other national brands will also consider the highway interchange to be an invaluable asset, and will seek opportunities to assemble and redevelop sites for new stores. Some could serve as important anchor stores for Burton, such as Kroger, Country Market, Beauty, Peebles, Stein Mart, Five Below, Gordmans, Home Goods, At Home, and Books-A-Million.

The interchange at I-69 also makes the location ideal for convenience hotels, and at least 10 chains are expanding in Michigan and could be candidates for Center Road. These include AmericInn, Microtel, and La Quinta, among others [Exhibit B.5]. Again, there is a real risk that some hotels could choose locations in adjacent Flint. Even so, they could be leveraged to support additional hotels in Burton, plus restaurants and other shopping conveniences.

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# Chapter 8. Public Input

There are four main methods of public participation what were used to help create the Master Plan, which include stakeholder and focus group interviews, community survey, visioning session, and public open house. The city worked on many different methods to obtain a variety of information from the public about the community and their vision for the next twenty years.

## Summary of Focus Group and Stakeholder

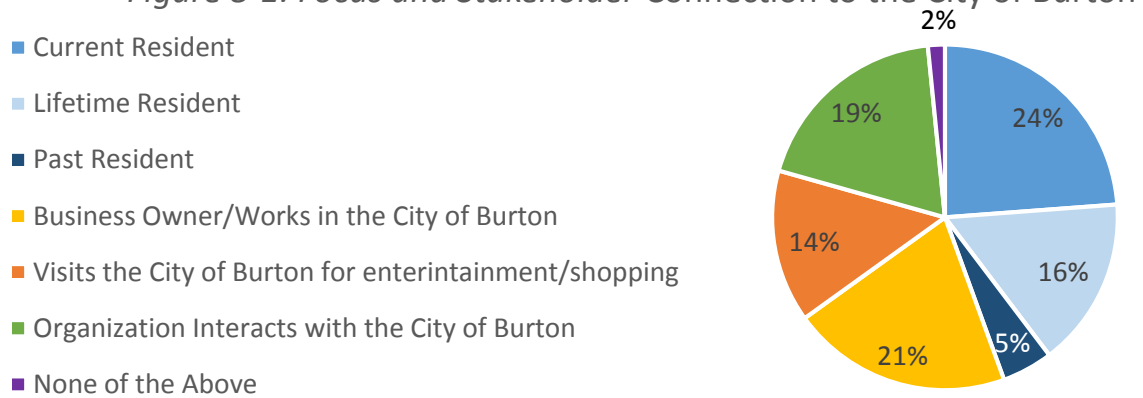
### *Introduction*

ROWE Professional Services Company conducted discussions with several stakeholders and focus groups that have strong and important connections to the City of Burton. **Stakeholders** are key persons that as part of an organization or as an individual have important insight on a particular subject or location in the City of Burton. The stakeholders that were interviewed include Steve Black, from Racer Trust and Cheryl Sclater from ELGA Credit Union. **Focus Groups** are key organizations where a group of individuals apart of the organization for a group discussion. The different groups that were interviewed include Burton Chamber of Commerce, Burton Area Historical Society, Burton Rotary Club, City of Burton Downtown Development Authority (DDA), City of Burton Parks and Recreation Commission, City of Burton Senior Activity Center, Flint River Watershed Coalition, Friends of the Library, Disability Network, and Mass Transit Authority.

All of the individuals and groups where asked about their connection to the City of Burton such as, things they would like to change, their vision for the future, and if there are suggests of policies, zoning ordinances, or programs that would make the City of Burton better. In addition, each individual or group was asked targeted questions involving the expertise in a particular area.

The groups that were involved in these discussions, had different connections to the City of Burton including living in the city, working or owning a business in the city, visits to the city for entertainment or shopping, and their organization works within the city. Residents were divided into three categories including current resident, lifetime residents, and past resident. Lifetime residents grew up and for the majority of their life have lived within the City of Burton. Almost half of the participants identified as at one point being a resident within the City. About a quarter of the participants identified as business owners or work within the City of Burton.

*Figure 8-1: Focus and Stakeholder* Connection to the City of Burton



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*Characteristics that make the Best of Burton*

The different focus groups were asked about were some of the best attributes or what they liked about the City of Burton. The first collection of answers came up repetitively in discussions. The second collection of answers are comments that only one particular discussion brought up.

**Many stakeholders and groups agreed that:**

- Good community for children, with schools and activities within stable neighborhoods
- Friendly environment
- Great community size
- Safe Community
- Business Friendly Community
- A diversity of housing setting options from agricultural to urban sceneries
- Have great unique places to eat
- A very active environment with many activities monthly within the community, especially runs races
- Low Taxes
- DPW, Police, and Fire services are responsive and reliable
- This is a place senior citizens have lived and want to stay to "Age in Place"
- Takes good care of Veterans

**Other likes include:**

### *Racer Trust*

- Potential to have a super site (Davison Site), which is rare in this region.

### *ELGA Credit Union*

- Diversity within of economic standings of the community
- The City of Burton works well to overcome/resolve issues

### *Parks and Recreation Commission*

- Good options for affordable housing, due to low taxes
- Good variety of housing stock

### *Burton Chamber of Commerce*

- Unique experience and highly competitive environment

### Disability Network

- Very welcoming people in community
- Shopping options along Center road
- Easy access to transportation

### *Flint River Watershed Coalition*

- From rural setting homes one has easy access to freeways



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### *Senior Activity Center*

- Quick to tear down blighted residential sites
- Senior Activity Center is in a good location
- The community takes good care of senior citizens
- Strong churches within the City of Burton
- The City of Burton is a great for senior citizens due to the Senior Activity Center, low cost of living, goods and services, and safe environment

### *Downtown Development Authority*

- *There are many features within the City of Burton including services and grocery stores*
- *The City of Burton is not run by just one company or person*
- *There are a variety of industries and companies within the City of Burton*

### *Friends Library*

- Neat and tidy community
- The City Complex including many services/departments in one location
- Sidewalk improvements that have been made are great improvements to the community
- Good Schools
- Growth in use of library as a community center

*Characteristics that are suggested to be changed in the City of Burton*

The different focus groups were asked what elements of the city they would change if they could. The first collection of answered came up repetitively in discussions. The second collection of answers only brought up in only one discussion group.

**Many stakeholders and groups agreed that:**

- Include more connections to trail ways around region
- The addition and connection of more sidewalks and crosswalks throughout community for all users (bike, pedestrians, and disable and handicap individuals)
- Improvement of the roads in the community
- Removal or development of vacant buildings/properties
- Have more blighted/vacant properties that are commercial be removed
- Revitalize the Courtland Mall
- Have a more walkable, vibrant, beautified, more restaurants, and public gathering space in DDA
- Have young people involved more in the community (boards and volunteer opportunities)
- To have the school systems combine, to unify city
- Have more unity within the City of Burton
- Create a “sense of place” in community
- Absent unified identity
- More affordable and accessibility housing
- Retaining more young professions to stay in the area
- More business recruitment from people outside of the city



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- Have a business core in the center of the City of Burton
- Improve the image/perception of the City of Burton away from Flint
- Want proactive, not reactive communication

**Other comments include:**

- Have history of city be more a part of the community
- Kids need to be centered on something in neighborhoods (add small parks, buildings, structures)
- Kids need a location to gather/activities/programs to be involved in
- Kids and young families are moving out of the area
- Downtown Development District
    - Make DDA area more historic
    - Have more restaurants, sidewalks, and crosswalks in DDA
    - Increase funding to DDA to maintain and improve district
    - Increase DDA district
    - Increase the number of events in DDA district
- Add safe street program, with street diets or street calming methods.
- Enforce clearing and maintenance of sidewalks
- More city design requirements to make sure community is accessible for all disabled persons
- Promote to businesses the asset of having a bus line near business
- Ensure that new development in rural areas are able to be accessible by multiple modes of transportation (pedestrians and buses)
- Create a Historical District or Historic Area
- Have a program that works against blight
    - Create a homeowner assistance program to make improvements on home
- There are often dark areas on streets and commercial shopping center properties
- Improve affordable housing options
- Improve communication with the City of Burton and other government agencies
- Expand Senior Activity Center Facility
- Increase funding for Parks and Recreation, including a full-time Director
- More pharmacy store variety
- Stronger welcome and network for new businesses to engage with
- Improve amenities throughout City of Burton
- Move beyond the industrial GM days and look for opportunities elsewhere

*Figure 8-1 Parks and Recreation Commission Focus Group Discussion.*



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- Better school districts
- Better maintenance of drainage ditches in rural setting
- More of a buffer zone along creeks in city
- Have more policies and programs that promote protection of creek and natural area system
- Clean up the e. coli in Kelly Lake (due to goose droppings)

We also asked many of the focus groups on their vision for the City of Burton in the next 20 years. Collectively the different groups generated this list of attributes of their future city:

- A more walkable community
- Have more of a network of non-motorized transportation walkways throughout the city
- Crosswalks on Center Road
- Roads are improved
- Attractive businesses of jobs and entertainment venues
- Having a historic/children museum in the City of Burton
- Less vacant properties
- Create from vacant/old buildings something else like more green space
- Maintain and improve the DDA district to feel like a downtown
- Have more walkability, beautification, lively, and other improvements within the DDA district to draw people in
- Have the Downtown Development Authority be involved in the Back to the Bricks event, or other festivals
- Support the park system to increase amenities and quantity to draw in more people to the area
- Large gathering space for community
- The combination of the three main school districts Atherton, Bentley, and Bendle school districts

*Topics Based Comments*

The different discussions where asked areas about their expertise, personal knowledge, and made comments on different topics in the City of Burton. There are six (6) basic including economy/business, community, housing, land and buildings, transportation, and parks and recreation.

## Economy / Business Environment

### The Downtown Development Authority indicates that:

- There are many long term businesses within the community, lots of small businesses, and a high density of businesses in the south side
- To remove/develop more vacant properties and buildings
- Have one speed limit along Saginaw Street
- Improve the RACER site at Hemphill Site
- Be more proactive in promoting businesses to be in Burton through Genesee County.
- Assets for businesses within the city include highway access, rail road, and access to large buildings
- Create a business owner facade improvement program



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## The Burton Rotary Club suggests:

- Try to retain more young professionals through:
  - Entrepreneur training/networking opportunities
  - Incubator space for startup businesses
  - Incentive/encourage companies to have internship programs

## ELGA Credit Union suggests:

- There are many vacant buildings and land, which allows the community to be open for many investment opportunities
- Promote local run businesses

## The Burton Chamber of Commerce suggest:

- Recruit business owners from outside of Burton to be part of the community

## The Disability Network suggests:

- To encourage businesses to hire disabled persons as workers

# Community

## Friend of the Library suggest for the Library:

- To add more parking spaces
- Expand the library facility
- To add an onsite Friends of the Library storage space/building
- Recreate the Library Memorial Park within property
- To add sidewalks in front of library
- Help get volunteers for annual cleaning and planting around library

## The Burton Area Historical Society suggests:

- To bring attention to historic homes and centennial farms within the City of Burton
  - This can be done by creating a Historical District or Historical Area
- Create more historical parks
- Create a historic museum of local history
  - Have the museum to have teaching/ children programs

## The Burton Rotary Club indicates that:

- DDA Area and Burton Park System, are assets within the city that can draw people to stay within the community



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### The Downtown Development Authority indicates they want:

- To have more events within the DDA district festivals (Back to the Bricks), Runs, DDA Luncheon, or other functions

### The Burton Senior Activity Center indicates that:

- The city should consider an exception or lower fee for senior citizen on sewer system fee, by either a lower rate for senior citizens or a free monitoring meter
- The community should be made more walkable with street crossings and sidewalks, especially along Center Road
- The City of Burton is a great for senior citizens due to the Senior Activity Center, low cost of living, goods and services, and safe environment

### Burton Chamber of Commerce suggests:

- Create more walking and bike trails throughout the community

### Flint River Watershed Coalition suggests:

- The development of a wellhead protection program
- Water quality monitoring/regulation of drainage or septic system systems into the environment

## Housing

### The Downtown Development Authority suggests:

- Have a program that addresses blight and assistance program to homeowners to make improvement to home
- Improve affordable housing options for residents

### The Burton Senior Activity Center suggests:

- To create more affordable senior housing options

### The Disability Network suggests:

- Make sure affordable and accessible houisng options are a vareity of price points and good quality
- To look for easy ways to make housing more accessible, like widing doorways with ease of closing once inside

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## Land and Buildings

### The Downtown Development Authority suggests:

- The demolishing of vacant, blighted, or too old buildings, so sites are more "Development Ready"

### Racer Trust has:

- Two sites owned by Racer Trust include Hemphill site and Davison site looking for buyers that will take action and fit within the community vision
- Potential for the Davison site, if combined with surrounding site to be a super site, a rare site in this region
- Difficulties with the Hemphill site, is that it used to be a previously landfill for industrial and municipal waste, but is partially paved parking lot

### The Burton Senior Activity Center suggests:

- The expansion of the Senior Activity Center Facility

### Flint River Watershed Coalition suggests:

- To develop a wellhead protection program
- To change Thread Creek's status as a non-navigable water body, to allow canoeing/kayaking
- To allow within city hoop houses, green houses, and chicken coops in residential lots

### Disability Network suggests:

- To look for easy ways to make buildings more accessible, like widing doorways with ease of closing once inside

## Transportation

### The Downtown Development Authority suggests:

- To have a Traffic Study, Corridor Study, or create an Access Management Plan along Saginaw Street
- Have improvement in the DDA Visioning Plan implement on Saginaw Street done smartly in cooperation with multiple government agencies

### Senior Activity Center suggests:

- To have larger font street signs



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## Mass Transit Authority indicates that:

- They are seeing an increase demand for public transportation and Your Ride services
- Coordinate future site planning with MTA regarding barrier free parking and bus stops

## The Disability Network indicates that:

- Lots of transportation accessibility options
- There could be more connectivity between MTA bus stops, sidewalk, and park lots areas, to allow easy mobility for all disable persons.

### Parks and Recreation

## The Parks and Recreation Commission suggests:

- More conversions of Rails to Trails
- To add a parking lot to Settlement Park
- If possible, combine vacant properties with schools' or city's properties to encourage ownership/maintenance of property
- To add a large park in the City of Burton with the ability to hold lots of people for celebrations
- To add unique improvements in parks that draw people in like a splash pad or archery practice field

## The Downtown Development Authority suggests:

- The addition of more parks in the south side of the city for all ages and full disable person accessible

## Chamber of Commerce suggests:

- The creation of more parks
- The improvement of features in parks
- The creation of a large gathering space in the community

## Flint River Watershed Coalition suggests:

- To have more park areas along creeks
- To create a partnership between the two organizations to find funding and expansion of park space along watershed in the city

## Disability Network suggests:

- Make sure Parks and Recreation opportunities or features are disable person accessible



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## The Senior Activity Center suggests:

- To have park improvements, such as a splash pad, would be an asset for the community park system
- To have more handicap accessible trails and paths within existing parks

*Suggested Programs, Policies, and Zoning Ordinances*

The different discussions were particularly asked about either programs, policies, or zoning ordinances that could be created and implemented to make wanted changes to the City of Burton.

- Have a Traffic Study, Corridor Study, or create an Access Management Plan along Saginaw Street
- Develop a complete street concept for the whole city
- Create a Historical District or Historical Area
- Develop goals of water quality and quantity
- Create a Wellhead Protection Program
- Have a program that addresses blight and homeowner assistance program make improvement on home
- To help create more sidewalks in community, add an additional option to have a fund property owners can put cost of sidewalks. The city would manage the fund and install sidewalks in community.
- Improve affordable housing options
- Have more in the Master Plan about more sidewalks, bike trails, affordable senior housing, and public amenities, and more handicap accessible trails and paths in existing park system
- Ability to have incubator space for startup businesses
- Have a larger buffer zone between residential and commercial
- Create an ordinance to protect those who have the “intent to walk” across a road, to help protected pedestrians from motorized vehicles
- Add to the zoning ordinance in the Site Plan Review process if site plan meets particular criteria the site plan will be sent to MTA for MTA Planner Comments.
- Create an ordinance to control panhandlers that requires those receiving money on the street to have vender license
- Create a water quality ordinance for septic systems and waste water in conjunction with County regulation
- Have more ordinances/policies that protect water quality such as clear cutting, impervious surfaces, sediment control and soil erosion, incentives to reduce impervious surfaces, runoff controls, landscape standards, and natural feature setbacks.



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### *Capital Improvements*

Discussion groups also talked about different Capital Improvements that would help the city reach their 20-year vision of the plan these include:

- Add more sidewalks along all major roads
- The adding of more walkways from MTA bus stops to sidewalks to parking lot areas
- Improvement of road system
- Convert more rails to trails
- The addition of more park spaces at Memorial Library
- To add a parking lot to Settlement Park
- Park improvements, such as a splash pad, archery course, dog park, etc.
- Have more handicap accessible trails and paths within existing parks
- The expansion of the Senior Activity Center Facility
- Expansions of the Memorial Library including a more parking spaces
    - Expansion of library facility
    - Creation of Friends of the Library storage space
    - Recreation of Memorial Children's Library Park

### *More About the Organizations*

**Racer Trust**

Racer Trust is an organization formed in 2011 as part of the bankruptcy court case of the former General Motors Corp. Racer Trust works to clean up and revitalization former GM locations. They promote/advertise and sell sites to buyers who will develop the site in a way that is in harmony with the community. There are two sites within the City of Burton that are owned and managed by Racer Trust, which are the Hemphill Site located on the corner of Saginaw and Hemphill and the Davison Site located on Davison and Covert Road.

More information at: http://www.racertrust.org/

**Burton Chamber of Commerce**

The Burton Chamber of Commerce works to welcome, promote, and celebrate new businesses, business expansion, renovation, re-opening, relocation, and milestone anniversaries that reside within the City of Burton. The Chamber of Commerce works on creating a network between businesses and entrepreneurs in the local area. This is a network that businesses in Burton can get involved in to help "build a better Burton".

More Information at: http://www.burtonchamber.org/

**Burton Historical Society**

Burton Historical Society is a nonprofit organization that strives to discover, promote, and educate others of the strong and rich history of the City of Burton. Members of the society are interested in keeping discovering, honoring, and educating the local Burton history. Each month Burton Historical Society meet to do research, educate, document, & share our history, having family speakers of past 181 years, come & share their story with our community.



Attachment: September Meeting Back up (2676 : Progress Report on Master Plan)

### Burton Rotary Club

Rotary is an international network of volunteers that work on humanitarian challenges. Members of Rotary have an interest in helping those within the City of Burton including individuals, businesses, and other community organizations. The Burton Chapter has undertaken fundraising for local projects, provided two pavilions for the city, plans the Harvest Hall Senior Citizen Ball, helped with race events, a bike program, and student scholarship program. The club works on improving the City of Burton one project at a time.

More Information at: http://www.burtonrotary.org/

### The City of Burton Downtown Development Authority (DDA)

The Downtown Development Authority (DDA) is located along S. Saginaw Street between Hemphill Road and Maple Avenue. Members are those who have an interest in the DDA district. The DDA board oversees, maintains, and constantly improves the district. Their most current vision of the DDA district is featured in their 2015 DDA Visioning Plan.

More Information at:
http://www.burtonmi.gov/business/downtown_development_authority/index.php

### The City of Burton Parks and Recreation Commission

The Parks and Recreation Commission works on maintaining, developing, hosting activities, and creating parks within the City of Burton. Members are those that have an interest in the City of Burton Park System from their business, individual, or organizational background. They currently have five parks within the city: Water Tower Park, Fireman's Park, Veteran's Memorial Park, Kelly Lake Park, and Atherton Settlement Park. They also put on different activities such as the Patriot Day Hero Run, Veteran's Honor Run, Easter Egg hunt, Car Show, Memorial Day Parade, Trick or Treat Trail, and the Christmas Parade. The last vison created for the park system is in the Parks and Recreation Plan in 2012.

More Information at: http://www.burtonmi.gov/departments/parks_and_recreation/index.php

### The City of Burton Senior Activity Center

The Burton Senior Activity Center has a variety of senior services and social activities for older adults, 60 and over. Many services include Medicare and Medicaid Counselors, Consumer Fraud Advocates, food assistance programs, tax aide program, exercise programs, transportation, classes, and seminars. Located at 3410 South Grand Traverse, the Senior Activity Center has a large activity area, pool table, and comfortable lounge area.

More Information at: http://www.burtonmi.gov/departments/senior_activity_center/index.php

### The Disability Network

The Disability Network's mission to promote freedom, choice, opportunity, and equality for people with disabilities through advocacy, education, and employment. They have many different things they do including advocacy, assistive technology resources, community technology center, education programs, healthcare resources and navigator, housing resources, nursing facility transition advice, personal assistance, help with ramps and home modifications, recreation, and transportation.

More Information at: http://www.disnetwork.org/



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### ELGA Credit Union

ELGA Credit Union is a non-profit financial organization with the single purpose of members helping members. Anyone that lives, works, worships, volunteers, or attends school within Genesee, Saginaw, Lapeer, Shiawassee, Oakland, and Livingston Counties is eligible to join and maintain checking or saving accounts, borrowing money, etc. Their organization is deeply committed to helping out in the community either through school supplies or help funding different activities within the community.

More Information at: https://www.elgacu.com/

### Flint River Watershed Coalition

The Flint River Watershed is increasingly healthy and strong, and offers many recreational, educational, and environmental opportunities. As the leading community-based advocate for clean water resources, the Flint River Watershed Coalition (FRWC) promotes efforts to protect, preserve, and improve our area's ecosystem through partnership, public education, scientific projects, and community involvement. They are an organization representing individuals, businesses, community organizations, and local unites of government sharing a vision of a healthier Flint River Watershed. They envision a day when the future of our drinking water is secure and the integrity of the Flint River is protected. They believe that all people should have access to the river for recreation, swimming, and fishing as well as the economic value it provides to our communities. They are interested in particular about Gilkey and Thread Creeks, which reside within the City of Burton.

More Information at: http://flintriver.org/blog/

### Friends of the Library

Friends of the Library is a volunteer group that works on maintenance, improvement, used-book sale, and many more activities involving the Burton Memorial Library on Center and Atherton road. This group strives on helping the community from youth to adult to engaged in reading and the community at large.

#### Mass Transit Authority (MTA)

The Mass Transit Authority (MTA) is the regional Genesee County public transportation services. The services include primary routes, regional routes, and Your Ride. Your Ride is a service a localized service where disabilities and senior citizens can reserve a ride to specific locations or to other bus service. MTA is dedicated to help all riders to help build a healthy and vibrant community. The MTA has developed a Strategic Plan for 2016-2026 that guides and goals for the organization

More Information at: http://mtaflint.org/index.php

## Community Survey

The community survey was conducted through Survey Monkey and available through Survey Monkey, the City of Burton website, and City of Burton, Master Plan Facebook page.

The rest of this section has yet to be written.---



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## Visioning Session

The **Visioning Session** is where all members of the public will be invited to come and share ideas on goals, objectives, likes, and proposed changes that can be made in the City of Burton.

The rest of this section has yet to be written.---

## Open House

The Master Plan **Open Hous**e will provide the public with an opportunity to provide input on various development options that the Planning Commission is considering involving future land use, proposed capital improvements, goals and objectives, or implementation strategies.

The rest of this section has yet to be written.---

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# Chapter 9. Goals and Objectives

The rest of this section has yet to be written.--- Place Holder

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