

PACKET SUPPLEMENT

Regular Council Meeting, Monday, May 9, 2016, 7:00 P.M.

Paul D. Bueche Municipal Building, 8083 Civic Drive Swartz Creek, Michigan 48473

✓ **PUBLIC UTILITY CONNECTION AGREEMENT** (*Business Item*)

This is a late item that I am hoping the city council can review and decide on at our May 9 meeting. This item is a road block in the critical path to move forward with construction of the assisted living center. I will attempt to be brief, but there are complexities to this topic.

The County (Genesee County Drain Commission Water and Waste Services Division) is reviewing the connection permits of the Springvale Assisted Living to the system. For those that are not aware, all new connection and expansions connected to the city water distribution system or sewer collection system must be approved by the County and assigned a CCIF (county capital improvement fee). This is part of our agreement with the County. While the city has disagreed with this practice in the past, I will not get into that here.

As part of this process, the County assigns a number of REU's (Residential Equivalent Units) to all new projects. For each REU, the developer owes \$1,000 for water and \$1,000 for sewer to the county and \$1,500 water and \$1,500 sewer to the city (\$5,000 total for each REU). As such, a new home would be assigned 1 REU and pay \$5,000 total for connecting to the system. No building permit can be issued by the city until this determination is made and the fees receipted to the County.

With that said, the city and county each attempted to assign the REU figure to the assisted living facility based upon the chart that specifies how this occurs for various uses. At this point, we do not agree on the assignment of REU's. I am including the REU calculation sheet of the County as reference. Using this, with the understanding that the assignment of units is all inclusive of ancillary uses, we conclude that the unit assignment should be 22 REU's:

$$0.3 \text{ REU/s per bed, rounded up} = 0.3 \times 71 = 21.3 \text{ (22)}$$

The county included units for salon, apartments, and restaurant in their calculation to achieve a unit count of 42 (see their detail attached). We believe this to be outside of the intent of the unit table. See the attached email from Oakland County staff.

Now what? The County is working with us on this matter. They offer a program for just such an occasion, called an REU Challenge. A cover letter and agreement is included that explains this. In short, the county will monitor hourly water usage and determine units by applying a more sophisticated engineering formula. The city is required to obtain meter reads, deliver them to the County, ensure the use of the facility is appropriate, and honor the results of this 24 month monitoring.

While it is true that the city stands to forego collection of \$60,000 of connection fees by advocating the position that this facility is responsible for 22 units, I believe this is the right thing to do. By any measure available, I believe that 22 units is more reflective of this facility's impact and is more just to the developer. I encourage the city council to enter into this agreement to maintain this lower unit assessment, pending flow measurements.

Motion by Councilmember: _____

WHEREAS, the City owns, operates, and maintains a water distribution system and sewer collection system in conjunction with and as a party to the Genesee County Drain Commission - Water and Waste Services Division (County); and

WHEREAS, the County and City both collect connection fees for new uses that connect to the system, with the determination of the number of Units being established by the County rate sheet for Residential Equivalent Units (REU's); and

WHEREAS, the City and County do not agree on the application of this chart as it applies to the Springvale Assisted Living facility; and

WHEREAS, the County has agreed to approve the permit with the assignment of units in the amount that the City determined to be appropriate, provided the developer, City, and County enter into an agreement to assess long-term flow of the facility and thereby determine final unit determination after 24 months.

NOW, THEREFORE BE IT RESOLVED that the City of Swartz Creek City Council hereby agrees to enter into the Public Utility Connection Agreement with Genesee County and the owner of Springvale Assisted Living as included in the Packet Supplement for the May 9, 2016 City Council Meeting, and further directs the Mayor to execute said agreement on behalf of the city.

Second by Councilmember: _____

Voting For: _____

Voting Against: _____



GENESEE COUNTY DRAIN COMMISSIONER'S OFFICE

- DIVISION OF -

WATER & WASTE SERVICES

G-4610 BEECHER ROAD - FLINT, MICHIGAN 48532-2617
PHONE (810) 732-7870 - FAX (810) 732-9773

JEFFREY WRIGHT
COMMISSIONER

April 27, 2016

Mr. Adam Zettel, Manager
City of Swartz Creek
8083 Civic Drive
Swartz Creek, MI 48473-1536

Re: City of Swartz Creek– Sanitary Sewer & Watermain - New #L15-324
Site Plan Review for: Springvale Assisted Living
CCIF Information – REU Challenge

Dear Mr. Zettel:

This letter will address recent discussions concerning the CCIF and REU calculations involving the proposed Springvale Assisted Living complex. Please note, the Site Plan has not been approved to date.

1. The project will be under an 'REU Challenge' which will include the 2-Year Peak Meter Program. Since this is a new development, the domestic meter that is purchased from the City of Swartz Creek for the building can be utilized for both domestic use and peak meter data. The meter will be used to record hourly flows. The hourly flows will be read monthly and the data will be provided by the City of Swartz Creek to the GCDC-WWS office for monthly analysis.
2. The cost of the analysis is \$2,000 for the 24 months of review. That equates to approximately \$85/month for data review and calculations. This fee shall be paid to this office prior to final site plan approval.
3. Attached is a draft 'Public Utility Connection Agreement' that should be executed by all parties and copy returned to us for final signature prior to site plan approval. This Agreement further explains the program.
4. At this time, the CCIF due is for 22 REUs (\$44,000). See attached CCIF worksheet. GCDC-WWS's calculation was originally for 42 REUs due to the proposed additional services provided at the facility. If after the 2 year review period, the REUs need to be increased or decreased, they will be adjusted according to the Agreement.
5. During review of the Agreement, you will notice that Exhibit B can be added in by the City. Exhibit B can be all the City related tap-in fees.

Should you have any questions please contact me at lmein@gcdcw.com or (810) 732-7870.

Sincerely,

Lynnette Mainz, P.E.
Project Engineer III

Enclosures

CC: MTR

Tom Svrcek, City of Swartz Creek
John Asselin, Asselin/McLane Arch Group
IPP
File

**GENESEE COUNTY WATER & WASTE SERVICES
CCIF WATER & SANITARY SEWER WORKSHEET
(COUNTY CAPITAL IMPROVEMENT FEE)**

CONNECTION NAME: SpringVale Assisted Living
 CONNECTION ADDRESS: West of Kroger
 TENANT SPACE: Convalescent Home
 MUNICIPALITY: City of Swartz Creek Log #: L16-083
 ACCOUNT #: TBD TAX ID #: 25-58-36-400-009
 BUSINESS NAME: Al Terpenning
 BUSINESS ADDRESS: 189 North Van Dyke Road, Marlette, MI 48453 (989) 550-3259
 IF DIFFERENT THAN CONNECTION INFORMATION

IPP PERMIT ISSUED? NO YES PERMIT # IN PROCESS

RESIDENTIAL EQUIVALENT UNIT CALCULATION:

TYPE OF USE: SEE ATTACHED GCDC-WWS CALCULATION WORKSHEET
 Although GCDC-WWS' calculation was 42 REUs, the City of Swartz Creek's calculation is 22 REUs. This Project will be monitored under the Peak Meter Program for two years to determine final REUs.

City Staff Calc → City of Swartz Creek's Calculation = 71 beds x 0.30 REUs/bed = 21.30

TOTAL # of REUs	=	22*	<i>rounded up</i>
TOTAL # of REUs	*42 REUs GCDC-WWS - 22 REUs City of Swartz Creek		
SANITARY REUs CREDITED	0		
WATER REUs CREDITED	0		
SANITARY REUs UNALLOCATED	0		
WATER REUs UNALLOCATED	0		
SANITARY REUs to be PURCHASED	22		
WATER REUs to be PURCHASED	22		

SUMMARY OF FEES:

SEWER

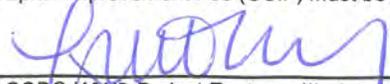
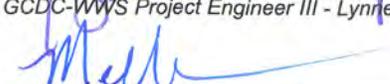
22 REUs @ \$1,000.00/REU = **\$22,000.00**

WATER

22 REUs @ \$1,000.00/REU = **\$22,000.00**

TOTAL \$44,000.00

TERMS: County Capital Improvement Fee (CCIF) must be paid prior to tap-in permit being issued by Municipality.

CALCULATED BY:  Date: April 27, 2016
GCDC-WWS Project Engineer III - Lynnette Meinz, P.E.
 APPROVED BY:  Date: 4-27-16

FEES ARE NOT OFFICIAL UNLESS SIGNED.

* This does not constitute approval of plans. Permits are still required.
 Please make checks payable to: The Genesee County Drain Commissioner

Springvale Assisted Living

Genesee County Calc

4/27/2016

Suite #	Room Type	Buisness Type	REUs Calculation				Total REUs
	Memory Care Studio (1/2 bath)	4 beds	0.30 REUs per bed	x	4 Beds	=	1.20
Double Occ	BF Mem Care Studio (1/2 bath)	2 beds	0.30 REUs per bed	x	2 Beds	=	0.60
	One Bedrm Mem Care Unit (1/2 Bath)	10 beds	0.30 REUs per bed	x	10 Beds	=	3.00
Double Occ	One Bedrm Unit A (Kitch)	6	1.00 REUs per unit	x	6 Units	=	6.00
Double Occ	One Bedrm Unit A-1 (Kitchenette)	5	1.00 REUs per unit	x	5 Units		5.00
Double Occ	BF One Bedrm Unit A-1 (Kitchenette)	3	1.00 REUs per unit	x	3 Units		3.00
	One Bedrm Unit B (Kichenette)	5	1.00 REUs per unit	x	5 Units		5.00
Double Occ	One Bedrm Unit B-1 (Kitch)	2	1.00 REUs per unit	x	2 Units		2.00
Double Occ	One Bedrm Unit B-2 (Kitch)	2	1.00 REUs per unit	x	2 Units		2.00
	Studio Unit 'C' (Full Bath)	3	0.30 REUs per bed	x	3 Beds		0.90
	BF Studio Unit 'C' (Full Bath)	6	0.30 REUs per bed	x	6 Beds		1.80
Double Occ	Two Bedroom Unit 'D' (Kitch)	2	1.00 REUs per unit	x	2 Units		2.00
	Restaurant	52	0.16 REUs per seat	x	52 Seats		8.32
	Salon	1 Booth w/sink	0.30 REUs per booth	x	1 Booth	=	0.30
	Salon	1 H/C Station	0.08 REUs per Hair Cut Sta.	x	1 Hair Cut Station	=	0.08

NOTE: They are getting licensed for 71 beds, double occupancy counted for more than 20 units

Total # of REUs (calculated): 41.20
 Round up to: 42.00

PUBLIC UTILITY CONNECTION AGREEMENT

This agreement made this ____ day of _____, 2016, by and between The County of Genesee, by the Genesee County Drain Commissioner, Jeffrey Wright, the designated Agent pursuant to Act 342 of Public Acts of 1039, as amended, hereinafter referred to as “Genesee County”, The City of Swartz Creek, a Michigan Governmental Corporation, hereinafter referred to as “City” and Darrell Terpenning, hereinafter referred to as “Owner”,

WHEREAS, “Owner” has commenced construction of a facility to provide housing and board for the elderly on a site located in the City of Swartz Creek, Genesee County, Michigan, and

WHEREAS, the facility will provide a facility consisting of private suites and a congregate meal facility, as well as personal grooming facility for the residents of the development, and

WHEREAS, the physical structure of the development is designed to provide for the privacy as well as the comfort of the residents in their individual suites, and

WHEREAS, the development has a unique mix of facilities and services provided to the residents, and

WHEREAS, there is uncertainty in the application of the “County” Ordinance relating to the determination of the number of Residential Equivalent Units to attach to the development for the purposes of determining the Capital Improvement Charge,

NOW THEREFORE, in consideration of the premises and other legally sufficient consideration, the Parties hereto agree as follows:

1. “Genesee County” and “City” agree to calculate a capital improvement charge for the municipal sewer and water connections to the facility based upon the rate as set forth in Exhibit A as prepared by “Genesee County” and Exhibit B as prepared by “City”, attached

hereto and incorporated by reference herein, which charge shall be paid in full at the time of issuance of permits by the “Owner”.

2. “Owner” agrees that all occupants of the facility will be required by contract to receive their meals in the congregate meal facility provided by the management, unless they are physically unable to do so.
3. “Owner” agrees that no meal preparation shall be permitted in the individual suites. If meal preparation is permitted in any residential suite, the entire facility will be reclassified at a higher REU equivalent rate.
4. “Owner” agrees that this agreement shall be applicable and enforceable by “Genesee County” and “City” as to the current owner and its’ successors and assigns and the restrictions shall act as a covenant attaching to the land.
5. “Owner” agrees that “Genesee County” and “City” may conduct an inspection of the suites located in the development to assure compliance with this agreement, subject to the privacy concerns of the occupants of the various suites.
6. The parties agree that this agreement may be recorded in the records of Genesee County Register of Deeds and shall apply to the legal description as set forth on Exhibit A, which is attached hereto and incorporated by reference herein.
7. The parties hereto agree that a meter shall be installed for the purpose of monitoring for a period of 24 months for the purpose of determining peak flowage at the facility. It is agreed that the domestic meter purchased from the “City” for the building use will be used also as the peak meter. The “City” will provide the monthly flow data to “Genesee County” for review in one (1) hour increments each quarter (every 3 months) before the 15th day of the next quarter. The determination of REUs shall be recalculated at the end of the monitoring

period and the actual cost of Capital Improvement Charges shall be recalculated in accordance with the metered uses. Any additional charges shall be paid by “Owner” within 60 days of the actual determination and any refund due the “Owner” shall be made within 60 days of the actual determination.

8. No monthly usage fee will be refunded. No retroactive usage charges shall be assessed in conjunction with a refund.
9. “Owner” agrees to provide monthly occupancy information indicating the number of occupied suites during the period of monitoring for determination of peak flowage.

IN WITNESS WHEREOF, the parties hereto have set their hands on the date and year first above written.

The County of Genesee

by _____
Jeffrey Wright, Designated Agent for
Genesee County, Drain Commissioner

The City of Swartz Creek

by _____
David A. Krueger,
Swartz Creek City Mayor

Owner

by _____
Darrell Terpenning, Owner

NOTICE OF RATE CHANGE

RATES AND CHARGES TO BE MADE TO THE MUNICIPALITIES
SERVED BY THE GENESEE COUNTY SEWAGE DISPOSAL SYSTEM
(INTERCEPTOR AND TREATMENT FACILITIES)
EFFECTIVE WITH THE BILLINGS TO BE SENT ON OR AFTER JANUARY 2, 2009

I. RATES:

- A. Where individual water meter readings are available, the readings shall be used as the basis for payment. The rate charge shall be based on the water consumption measured by the accumulation of these individual water meter readings and shall be \$1.658 per 100 cubic feet of water consumed or \$2.217 per 1,000 gallons of water consumed, plus a minimum charge of \$3.414 per month (\$10.242 per quarter) per unit.
- B. Where community bulk sewer meter readings are available, the readings shall be used as a basis of payment. The rate charge shall be based on sewer discharged through a meter directly into the county interceptor and shall be \$1.912 per 100 cubic feet (or \$2.556 per 1,000 gallons) of water delivered, plus a minimum charge of \$500.00 per month.
- C. For all other connections having an unmetered water supply, the rate shall be \$24.14 per unit per month (\$72.28 per quarter) based upon the Residential Equivalent Units (REU) set forth below:

<u>USAGE</u>	<u>REU</u>
Auto Dealers.....	.40 per 1000 sq. ft.
Barber Shops .....	.08 per chair
Bar .....	.06 per seat
Beauty Shops .....	.30 per booth
Boarding Houses .....	.20 per person
Boarding Schools .....	.35 per person
Bowling Alleys (No Bars/Lunch Facilities).....	.20 per alley
Car Wash	10.00 single production
Churches .....	.01 per seat
Cleaners (Pick-up Only) .....	.06 per employee
Cleaners (Pressing Facilities)	1.25 per press
Clinics (minimum assignment – 1 unit/profession) .....	.65 per doctor
Convalescent Homes .....	.30 per bed
Convents .....	.25 per person
Country Clubs .....	.10 per member
Drug Stores (With Fountain Service) .....	.10 per seat
Factories (exclusive of excessive industrial use) .....	.50 per 1,000 sq. ft.
Fraternal Organizations (Members Only)	1.25 per hall
Fraternal Organizations (Members & Rentals)	2.50 per hall
Grocery Stores & Super Markets	1.10 per 1,000 sq. ft.
Hospitals	1.40 per bed
Hotels .....	.25 per bed
Laundry (Self Service) .....	.50 per washer
Motels .....	.25 per bed
Multiple Family Residence	1.00 per unit
Office Building .....	.60 per 1,000 sq. ft.
Public Institutes (Other than Hospitals) .....	.40 per employee
Restaurants (Dinner and/or Drinks) .....	.16 per seat
Rooming Houses (No Meals) .....	.167 per person
Schools (Cafeteria without Showers and/or Pool)	1.50 per classroom
Schools (Showers and/or Pool)	2.00 per classroom

Factor applied by City



USAGE

REU

Schools (Gym & Cafeteria)	2.50 per classroom
Service Stations .....	.30 per pump
Snack Bars, Drive-ins .....	.10 per seat &/or stall
Store (other than specifically listed) .....	.20 per employee
Swimming Pool	3.50 per 1,000 sq. ft.
Theaters (Drive-Ins)	0.1 per car space
Theaters (Inside with Air Conditioning) .....	.0001 x weekly hours of operation x seats
Tourist Courts (Individual Bath Units) .....	.27 per cubical
Trailer Parks (Central Bath Houses) .....	.35 per trailer
Trailer Parks (Individual Baths)	1.00 per unit
Trailer Parks (Individual Baths Seasonal Only) .....	.50 per unit
Warehouses .....	.10 per 1,000 sq. ft.

II. INFLOW AND INFILTRATION

A. Fee

Each community shall pay additional fees for excess inflow and infiltration delivered to the County interceptor for treatment. Excess inflow and infiltration shall be considered to be any flow in excess of two (2) times the annual average flow. If a 25-year storm event results in excess flows, no fee shall be collected by the County Agency.

The fees shall be as follows:

Volume from 2 to 2.5 times the community average flow	\$0.60 per 100 cubic feet
Volume from greater than 2.5 to 3 times the community average flow	\$0.90 per 100 cubic feet
Volume greater than 3 times community average flow	\$1.20 per 100 cubic feet

B. Penalty

For each event in which a community's flow exceeds three (3) times the community's average flow, the community will pay a \$5,000.00 penalty to the County Agency. The funds will be returned to the community on a dollar per dollar basis for each dollar spent on removing / eliminating inflow and infiltration in their collection system.

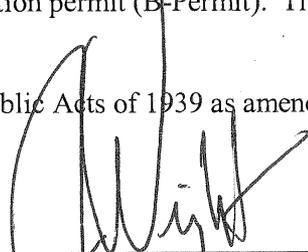
III. CHARGES:

A. County Capital Improvement Fee

The County will charge a Capital Improvement Fee of \$1,000.00 per unit based upon the "Table of Unit Factors" prior to the issuance of a sanitary connection permit (B-Permit). The County Agency shall collect the fee.

The rates are established pursuant to Act 342 Michigan Public Acts of 1939 as amended.

Dated: 12-1-08



 JEFFREY WRIGHT
 Genesee County Drain Commissioner
 The County Agency

OAKLAND COUNTY DRAIN COMMISSIONER

Schedule of Unit Assignment Factors July 1, 1998

Usage		Unit Factors	Information Source
Single Family Residential	1.0	per dwelling	
Auto Dealers	.30	per 1,000 sq. ft	D
Banquet Hall	.50	per 1,000 sq. ft	D
Barber Shops	1.0	per 1,000 sq. ft	D
Bars	.044	per seat	D
Beauty Shops	0.223	per booth	D
Boarding Houses	.16	per person	A-C
Boarding Schools	.27	per person	A-C
Bowling Alleys (no bars, lunch facilities)	.16	per alley	D
Car Wash			
a. Manual, Do-It Yourself	2.5	per stall	D
b. Semi-Automatic (Mechanical without conveyor)	12.5	per stall	D
c. Automatic with conveyor	33.0	per lane	D
d. Automatic with conveyor conserving and (recycling water)	8.4	per lane	D
Churches	.008	per seat	D
Cleaners (pickup only)	.048	per employee	D
Cleaners (pressing facilities)	1.25	per press	D
Clinics			
a. Medical	1.00	per doctor	D
b. Dental	1.40	per dentist	D
Convalescent and/or Nursing Homes	.3	per bed	D
Convents	.20	per person	D
Country Clubs	.08	per member	A-C
Drug Stores			
a. With fountain service	.08	per seat + .14 per 1,000 sq. ft.	D
b. Without fountain service	.14	per 1,000 sq. ft.	D

Factor used by
Oakland County
(same as Gen Co)



Usage		Unit Factors	Information Source
Factories (exclusive of excessive industrial use)	.50	per 1,000 sq. ft.	D
Fraternal Organizations (members only)	1.0	per hall	D
Fraternal Organization (members & rentals)	2.0	per hall	D
Funeral Homes, including one residence	2.2	per funeral home	D
Grocery Stores & Supermarkets	0.31	per 1,000 sq. ft.	D
Health Clubs			
a. With showers and/or pool	2.3	per 1,000 sq. ft.	D
b. Without showers and/or pool	.26	per 1,000 sq. ft.	D
Hospitals	1.22	per bed	D
Hotels and/or Motels (exclusive of swimming pools, bars, restaurants, etc.)	.38	per room	D
Laundry (self-service)	.54	per washer	D
Mobile Home Parks	0.60	per mobile home	D
Multiple Family Residence	0.60	per residence	D
Office Building	.40	per 1,000 sq. ft.	D
Public Institutions other than Hospitals	.32	per employee	A-C
Racquet Clubs	.82	per tennis or handball court	D
Restaurants			
a. Conventional type with or without drinks	0.13	per seat	A-B
b. Quick service franchise type, without dishes, dealing mainly in hamburgers with or without eating in building (includes but not necessarily limited to McDonald's, Burger Chef, Burger King, Red Barn and Hardees).	5.6	per restaurant	D
c. All other restaurants (includes but not necessarily limited to drive-ins, snack bars, carry outs, such as fried chicken and pizzas; could have some eating in building, all without dishes.	1.8	per restaurant	D
Rooming Houses (no meals)	.13	per person	A-C

Usage		Unit Factors	Information Source
Schools			
a. Elementary	.012	per student	D
b. Junior or Middle High	.020	per student	D
c. Senior High	.038	per student	D
d. Bus Maintenance Facility	.165	per 1,000 sq. ft.	D
Service Station	.24	per pump	D
Store (other than specifically listed)	.16	per employee	D
Summer Camps	.14	per housing unit	D
Swimming Pool (Single family residential excluded)	3.00	per 1,000 sq. ft.	D
Theaters (Drive-In)	.012	per car space	D
Theaters (indoor)	.008	per seat	D
Tourist Courts (individual bath units)	.27	per cubical	A-B-C
Warehouses	.10	per 1,000 sq. ft.	D

A - Cincinnati Report
 B - Gordon MacDougall Report
 to Wayne County

C - Manual of Septic Tank Practices Publication
 No. 526, U.S. Department of Health
 D - Oakland County Dept. of Public Work Studies

Note: New Unit Factors are Underlined

JEP/kes/banquet.wk4

From: [Davis, Mark W](#)
To: [Adam Zettel](#)
Cc: [Appel, Glenn R](#); [Prince, Tim P](#); [Korth, Steven A](#); [Wineka, James A](#); [Chirolla, Raphael J](#)
Subject: RE: nursing home
Date: Thursday, April 14, 2016 7:49:04 AM
Attachments: [unit_factor.pdf](#)
[OCDPW Unit Factor Study 10-21-1975 - Convalescent Homes and Nursing Homes.pdf](#)
[1975 Data Collection.pdf](#)
[1961 McDonald Report.pdf](#)

Dear Mr. Zettel,

This note explains why 0.3 units/bed is used as a factor and how, in this persons opinion, it should be applied.

Attached is Oakland County's current Schedule of Unit Assignment Factors which is available on our website. Oakland County's REU equivalent for a single family unit is currently based on 3.2 people @ 100 gallons per day per person OR 320 gallons per day per REU.

<https://www.oakgov.com/water/Pages/publications>

I also included:

1. OCDPW 1975 REU study including collected support data
2. 1961 McDonald survey

Genesee County uses 315 gallons per day

The 1975 OCDPW study indicates that Nursing Home Unit Factors are based on water consumption, number of beds and floor area. It is my opinion that all relative facilities within a nursing home i.e. kitchens, dining area, offices, etc. are included in OCWRC current unit factor of 0.30 units per bed.

As I mentioned, OCWRC is currently reviewing our Unit Schedule for possible updates.

I hope you find this information helpful.

Mark W. Davis
Senior Engineering Systems Coordinator
Oakland County Water Resources Commissioners Office
248-452-2172 (p)
248-858-1066 (f)

From: Adam Zettel [<mailto:azettel@cityofswartzcreek.org>]
Sent: Wednesday, April 13, 2016 10:19 AM
To: Davis, Mark W
Subject: nursing home

Hi Mark,

Thanks again for taking my call.

To follow up, I would much appreciate a scan of the supporting data that was used to determine the

convalescent/nursing home unit factor of 0.3.

Take care!

Adam Zettel, AICP

City Manager

Swartz Creek City

8083 Civic Drive

Swartz Creek, MI 48473

810.635.4464 general office

810.287.2147 cell

azettel@cityofswartzcreek.org

<https://www.facebook.com/CityofSwartzCreek>

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OAKLAND COUNTY DEPARTMENT OF PUBLIC WORKS

NO. 1 PUBLIC WORKS DRIVE
PONTIAC, MICHIGAN 48054

PHONE:

BOARD OF PUBLIC WORKS
ALEXANDER C. PERINOFF, CHAIRMAN
MARY M. DEARBORN, VICE-CHAIRMAN
JAMES DUNLEAVY, SECRETARY
FRED D. HOUGHTEN, MEMBER
GEORGE W. KUHN, MEMBER
BERNARD F. LENNON, MEMBER
RICHARD R. WILCOX, MEMBER

ADMINISTRATION AND CONSTRUCTION 858-1075
WATER AND SEWER OPERATIONS 858-1110

DONALD W. RINGLER
DIRECTOR
RICHARD L. CASTLE
CHIEF ENGINEER
GORDON R. WYLLIE
ASST. CIVIL COUNSEL

October 21, 1975

MEMORANDUM

To : Mr. D.W. Ringler
Mr. M. M. Corwin

From : Jay B. Shah

Re : Unit Factor Study
Convalescent Homes and Nursing Homes

Presently our unit assignment for the convalescent homes is 0.22 units per bed. This is based on the Gordon McDougall Report to Wayne County (1951) and our department studies of March 1961. Incidentally, as per the Oakland County Health Department, convalescent homes are defined same as nursing homes.

The Operations Division of the Department of Public Works has recently completed a study based on water consumption, number of beds and floor area of the existing convalescent and/or nursing homes.

The Study included :

- (a) The collection of data from most of the available samples in the Oakland County area.
- (b) A statistical analysis of the data collected.
- (c) Conclusions based strictly on the statistical analysis with standard deviation presented.

The primary analysis of data resulted in a variance of 32% for the unit factor based on water consumption - number of beds and a variance of 90% for the unit factor based on water consumption - floor area. Thus further analysis was done with water consumption - number of beds data, giving more consistent set of results.

Memorandum To : D.W. Ringler
M.M. Corwin

Page 2

October 21, 1975

This is where the figure was derived...over 40 years ago.

Conclusions and Summary of the Study is as follows :

Number of Samples	15
Unit Factor Arithmetic Mean	0.3021
Unit Factor Statistical Mean	0.3
Standard Deviation	0.0663
Effective Unit Factor	0.3 per bed

Attached is a complete study done by the undersigned.

It is recommended that our department adopt the unit factor of 0.3 per bed for the convalescent homes and/or nursing homes.

Very truly yours,



J.B. Shah,
Operations Engineer

JBS/gh

Enclosures :

cc : Jim Porter
Martin Wiersma
Ray Thompson

UNIT FACTOR STUDY - CONVALESCENT HOMES

	NAME & ADDRESS	Average Yearly Water Consumption in Cu. Ft.	No. of Beds	Yearly Water Consump. per Bed in Cu. Ft.	Unit Factor (15370 cu. ft. per year = 1 Unit)
1.	Lourdes Nursing Home 2300 Watkins Lake Rd. Waterford	562,050	108	5,204.2	.339
2.	Mount Vernon 26715 Greenfield Rd. Southfield	1,060,650	288	3,682.8	.24
3.	Alexander Convalescent Home 718 W. 45th Street Royal Oak	354,650	63	5,629.4	.366
4.	Convalescent Center 205 N. Center Royal Oak	55,750	13	4,288.5	.279
5.	Holmes Convalescent Center 1725 Chester Rd. Royal Oak	363,850	80	4,548.1	.296
6.	Manor Haven Nursing Home 1607 S Lafayette Royal Oak	96,700	24	4,029.2	.262
7.	Sherwood Hall 3030 Greenfield Rd. Royal Oak	677,000	153	4,424.8	.288
8.	Cambridge Nursing Home 31155 Dequindre Madison Heights	8,323	120	69.4	.005*
9.	Hilton Convalescent Home 3161 Hilton Ferndale	368,750	78	4,727.6	.308

*Flyer - Eliminated from revised study.

UNIT FACTOR STUDY - CONVALESCENT HOMES

	NAME & ADDRESS	Average Yearly Water Consumption in Cu. Ft.	No. of Beds	Yearly Water Consump. per Bed in Cu. Ft.	Unit Factor (15370 cu. ft. per year = 1 Unit)
10.	Brae Burn, Inc 1312 N. Woodward Bloomfield Hills	865,000	115	7,521.7	.489
11.	William Convalescent Center 21017 Middlebelt Rd. Farmington Hills	1,044,450	112	9,325.4	.607*
12.	Farmington Nursing Home 30405 Folsom Rd. Farmington Hills	778,000	179	4,346.4	.283
13.	Bedford Villa Nursing Home 16240 W. Twelve Mile Rd. Southfield	272,000	61	4,459.0	.29
14.	Franklin Manor Conval. Center 26900 Franklin Rd. Southfield	393,400	107	3,676.3	.239
15.	Lahser Hills Nursing Home 25300 Lahser Rd. Southfield	616,050	161	3,826.4	.249

*Flyer - Eliminated from revised study.

SURVEY OF CONVALESCENT HOMES

By : Bill McDonald D. P. W.

March 27, 1961

Name & Address of Establishment	Patient Capacity -Beds-	1 Year - Water Consumption (365 days)		
		Annual Gallons	Daily Gallons	Gallons per Bed-per day
Grove Crest Manor 161 State St., Pontiac	33	979,950-60	2,685	81.4
Rose Lane 841 Auburn, Pontiac	21	409,900-60	1,123	53.5
Evergreen 54 Seneca, Pontiac	20	724,000-60	1,984	99.2
Pine Cone 1365 Baldwin, Pontiac	15	218,450-60	598	39.9
Stoney Croft 714 Main, Rochester	20	344,100-60	943	47.2
Alma 3224 Crooks, Royal Oak	19	506,500-60	1,388	73.1
Alexander 718 W. Fourth, Royal Oak	29	491,500-59	1,347	46.4
Crowley 2440 E. Lincoln, Royal Oak	20	584,000-59	1,600	80.0
Elizabeth 1523 S. Main, Royal Oak	21	639,000-59	1,751	83.4
The Gables 421 W. 11 Mile, Royal Oak	23	628,500-60	1,722	74.9
Holmes 1317 S. Washington, Royal Oak	20	481,000-60	1,318	65.9
Kirby 751 Hendrie, Royal Oak	29	398,000-60	1,090	37.6
Lindsay 205 N. Center, Royal Oak	13	309,000-59	847	65.2
Tower Park 1607 S. Lafayette, Royal Oak	24	888,500-60	2,434	101.4
TOTAL	307		20,830	67.9

Average Daily Consumption 67.9 gallons per day = .21555 or .22 Unit Factor to be used.
 A report of Gordon McDougall of Wayne County published in 1951 on twelve (12) Convalescent Homes in Wayne County, at that time, averaged 65.3 gallons per day, per bed, which confirms the above Survey.