

## AGENDA REPORT

TO: Mayor & City Commissioners  
FROM: Ken Hibl, City Manager  
DATE: July 14, 2010  
RE: City Manager's Report



For the Agenda of July 19, 2010

---

Medical Marihuana Moratorium Update. We are scheduling an information presentation and a public hearing regarding this topic for the City Planning Commission at its scheduled August 11<sup>th</sup> meeting. We are inviting a law firm from Lansing, a compassion group from Ypsilanti, our City Attorney, law enforcement officials, and a medical practitioner responsible for certification of care givers and providers to the meeting to provide various view points and information. This information will be used by the Planning Commission to formulate a recommendation(s) for the City Staff and the City Commission regarding land use practice and policy (if any) related to medical marihuana that they believe should/should not be implemented in the City. Both our City Attorney and I recommend that the City Commissioners attend on an individual basis to listen to the information presented – understanding that if you do so, you would be unable to discuss the topic amongst yourselves for the potential of an open meetings violation.

Updated Clare Waste Water Ammonia Project Schedule Update. We met with GFA on this topic last week. The Webitat Module pilot study has been a success (see copy of att'd report). Based on this success, we are planning on moving forward with this process; a tentative major events schedule associated with this project is attached for the Commission's information.

Special Planning Commission Meeting. The City's Planning Commission has agreed to hold a special meeting on Wednesday, July 21<sup>st</sup> to accommodate a site plan request of Boone Adult Care (Horizon) to construct an addition to its current structure.

Zoning Board of Appeals Meeting. A Zoning Board of Appeals meeting has been scheduled to convene on Friday, July 30<sup>th</sup> to hear a request (*copy att'd*) for a variance to the City's sign ordinance related to sandwich boards. Both the Main Street Board and the City Planning Commission have previously rejected petitions from this business owner to consider an amendment to the City's zoning ordinance codes to allow placement of a sandwich board in the City's downtown district.

Plumbing & Mechanical Inspection Services Approval. We have received approval from the state to proceed with the oversight and management of all building services in the City. But before we can do so, we must adopt specific ordinances for mechanical and plumbing inspection services; I anticipate that we will present those ordinances to the City Commission in August.

Deer in Clare. The number of expressed concerns we are receiving related to the number of deer and the damage the deer are causing is escalating. I ask for the Commission's guidance regarding whether you want the staff to pursue options for deer population control in the City. This will likely be a very emotionally-charged issue, and the reports I've read and discussions

I've had with my contemporaries around the state indicate very mixed results of various culling and control programs that have been attempted.

Attachments.

1. Webitat Module Pilot Study Report.
2. Ammonia Project Schedule.
3. Zoning Variance Request.

July 7, 2010

Ken Hibl  
City of Clare  
202 West Fifth Street  
Clare, MI 48617

RE: Entex Technologies – Webitat Module  
Ammonia Reduction Report

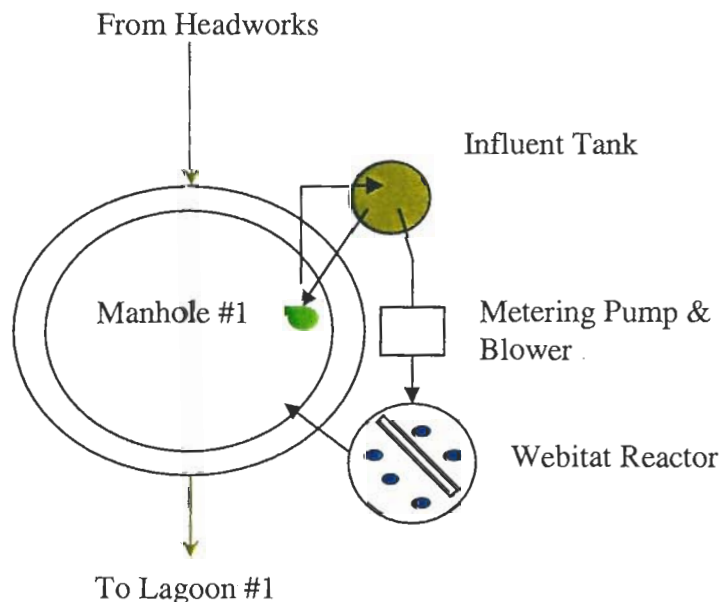
Dear Mr. Hibl,

This report is in regards to Entex Technologies, Inc. ammonia reduction pilot study recently performed at Clare's WWTF. The objective of the pilot study was to verify that the design nitrification rate of 0.93 pounds of ammonia is removed per 1,000 ft<sup>2</sup> of Webitat at a minimum wastewater temperature of 9 °C (48 °F) and current average daily flow rate of 0.6 million gallons per day (MGD). Essentially to verify that the fixed media Webitat modules are capable of removing ammonia levels to meet or exceed the NPDES permit seasonal (May 1<sup>st</sup> – September 30<sup>th</sup>) ammonia limit of 11.0 mg/l. The pilot study proposal can be found in Attachment A for review.

The following is a description of the pilot study process, results, construction schedule and recommendations.

### Pilot Study Process

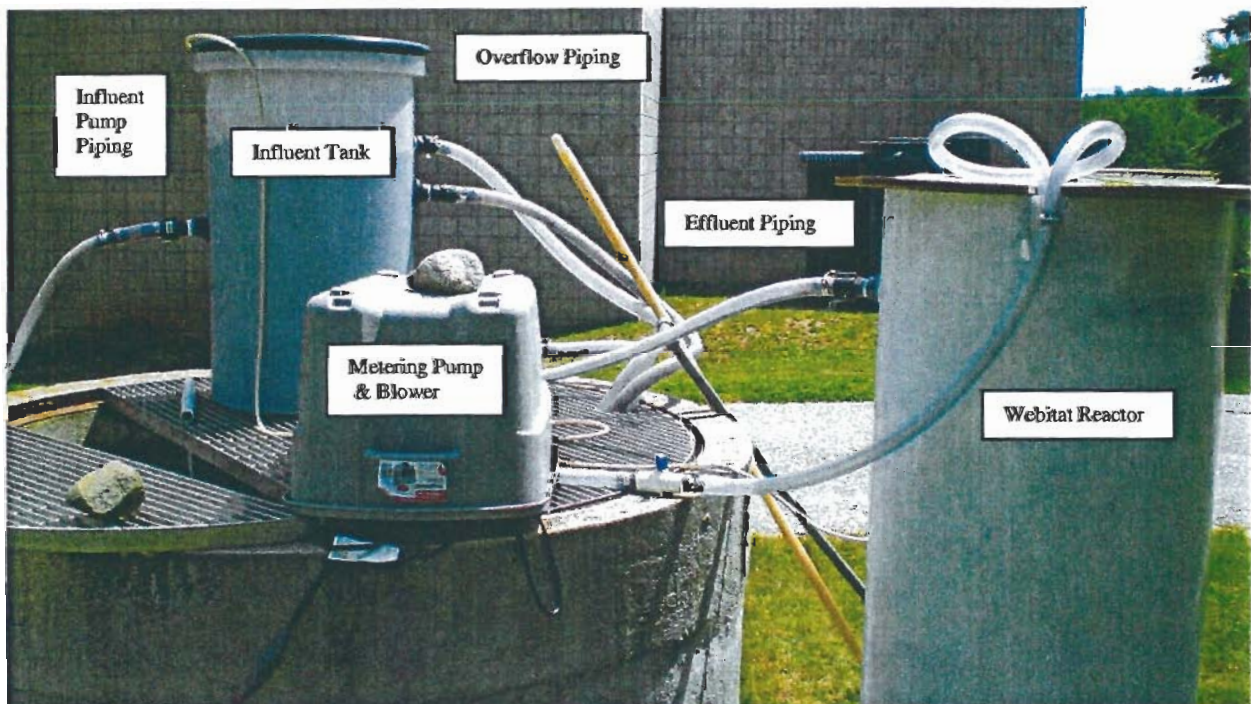
On April 15<sup>th</sup> the Webitat pilot was installed near the inlet of Lagoon #1 in the following configuration.



This location was chosen due to easy access, closeness to lagoon influent and available power source. Unfortunately the influent pump frequently plugged with lagoon debris and a steady continuous source of wastewater was not available for feeding the Webitat reactor.

A meeting was scheduled for May 5<sup>th</sup> with Clare WWTF staff, Gourdie-Fraser, Inc. and Entex Technologies, Inc. to discuss the plugging issues and to determine a new location for the pilot. It was decided that Manhole #12 located between the Headworks Building and Lagoon #1 would be the best suitable location. On May 5<sup>th</sup> the pilot study was relocated and started at this location. Because raw wastewater was being fed to the Webitat reactor, approximately 15 to 20 gallons of Lagoon #3 was used as seed to get the biological activity started. The configuration of the pilot remained the same.

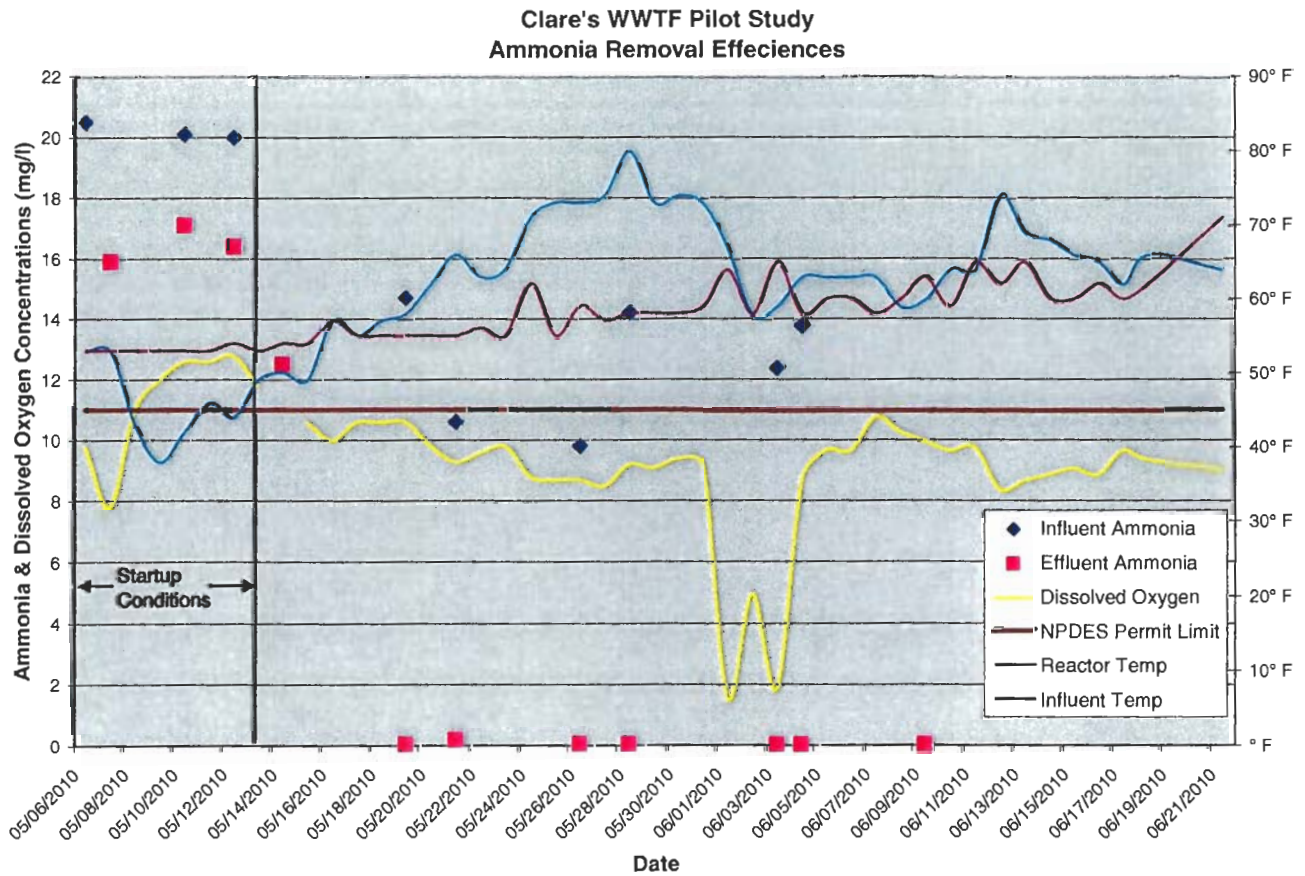
A trash pump served as the influent pump. The trash pump was located and fully submerged in Manhole #12 raw wastewater stream. This pump ran continuously and kept the influent tank recirculating with raw wastewater. Raw wastewater temperature was monitored in the influent tank. A metering pump pumped out of a screening basket located within the influent tank continuously at approximately 0.5 gallons per hour (gph) into the Webitat reactor. This reactor consisted of a 150 gallon tank and one 6 ft<sup>2</sup> Webitat module. The hydraulic residence time in the Webitat reactor was approximately 12 days. 12 days residence time represents the residence time of the existing three lagoons at a flow of 1.2 MGD. After treatment in the Webitat reactor the effluent flowed by gravity into the Manhole #12. A blower and coarse bubble diffuser system was used to provide aeration and mixing in the Webitat reactor.



**Laboratory Data & Results**

Periodic sampling and data collection was performed by Clare WWTF staff throughout the pilot study period. Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Ammonia Nitrogen (NH<sub>3</sub>-N), Alkalinity and Total Phosphorus (TP) was collected from the influent tank and effluent (minus TP). Temperature, dissolved oxygen and pH were monitored in the influent tank and Webitat reactor. The laboratory data is located in Attachment B for review.

The following graph illustrates the influent and effluent ammonia concentrations in comparison to raw wastewater temperature. It can be seen that the biological growth (start up) of nitrifying bacteria was reached around May 15<sup>th</sup> where the effluent ammonia concentrations decreased quickly.



Due to the time of year that the pilot study was initiated, the average raw wastewater temperature was approximately 58° F which is significantly higher than the targeted wastewater temperature

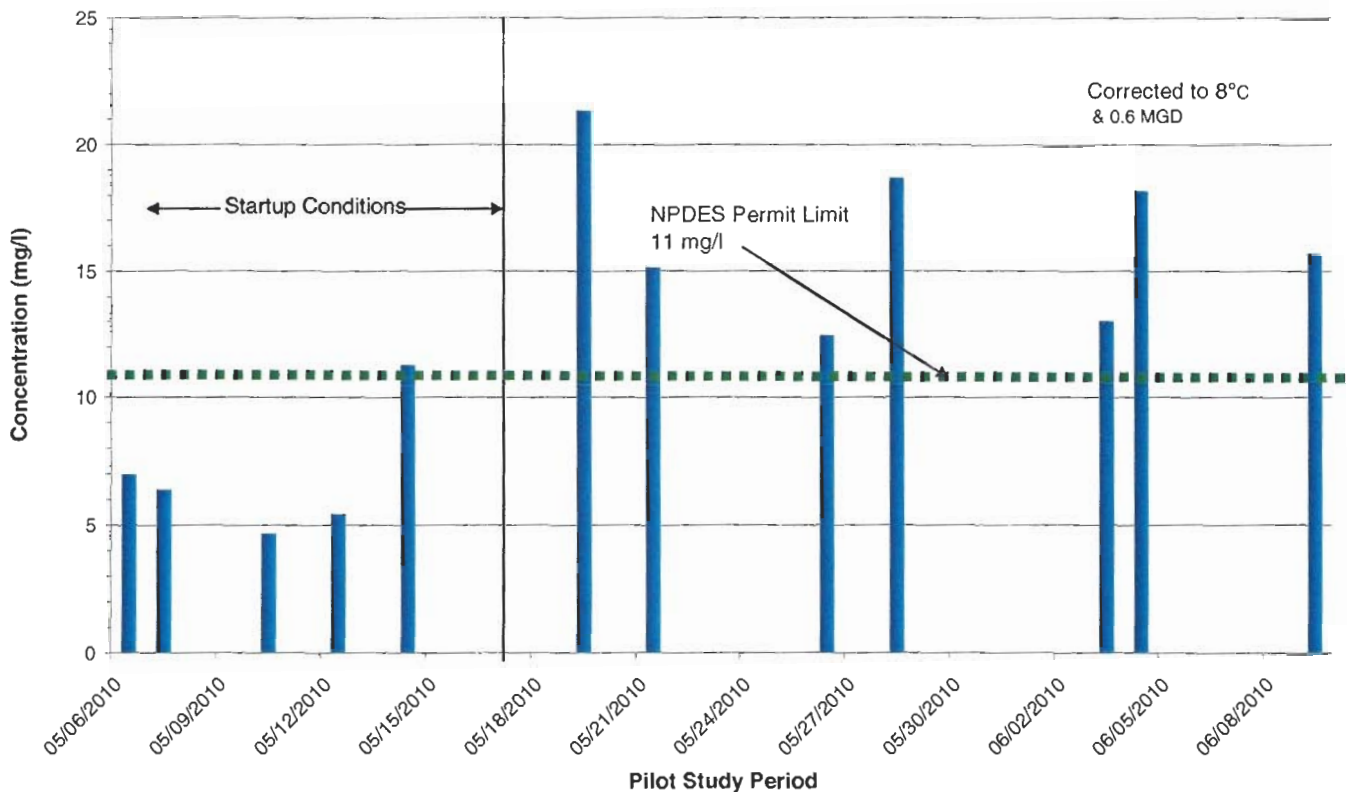
of 48° F. Because of increasing temperatures, a temperature correction factor needs to be applied to the laboratory data analyzed. The equation used for temperature correction is:

$$B_{A,8} = B_{A,T} * \phi^{(T-8)} \text{ where } \phi = 1.06$$

WERF, 2000. Sen, D.; Copithorn, R.; Randall, C.W.; Jones, R.; Phago, D.; Rusten, B. (2000). *Investigation of Hybrid Systems for Enhanced Nutrient Control*, Water Environment Federation.

As discussed above, the metering pump was run at 0.5 gph which is equivalent to 1.2 MGD which is the design flow rate for the WWTF. The pilot study was equipped to handle current flow conditions of approximately 0.6 MGD. Correcting for flow and temperature produces the following graph.

**Ammonia Removed Corrected for Temperature & Flow**



The graph above shows the amount of ammonia removed. Anything above the dash line meets the NPDES ammonia permit limit of 11 mg/l.

### **Construction Schedule**

With Entex Technologies, Inc. and their Webitat modules for ammonia reduction, the construction schedule from date of purchase order is approximately 170 days. This includes a submittal package, currently drafted, to start up training. This schedule is aggressive and assumes that a purchase order would be initiated in July 2010. The complete schedule is located in Attachment C.

### **Recommendations**

Because of the wastewater treatment technology involved, a pilot study was successfully conducted by Entex Technologies, Inc. to verify their design assumptions for ammonia reduction. Supporting design documents, O&M manuals, references (previous engineers and Webitat clients) have also been checked along with and a site visit to Kenosha, WI to view Webitat modules in an aerated lagoon scenario. Based on this information Gourdie-Fraser, Inc. recommendation is to proceed with owner purchase of the ammonia reduction technology from Entex Technologies Inc for \$619,350. The owner purchased equipment will be part of the larger overall WWTF upgrade general contract bid document.

The Webitat ammonia reduction quote/contract is located in Attachment C for review.

Should you have any questions or comments regarding the pilot study, recommendation or construction schedule, please let us know at your earliest convenience. We will be attending the July 8, 2010 meeting to address any questions on this matter.

Respectfully,

GOURDIE-FRASER, INC.

Joseph H. Elliott P.E.  
President

Jason Borchert, P.E.  
Project Engineer

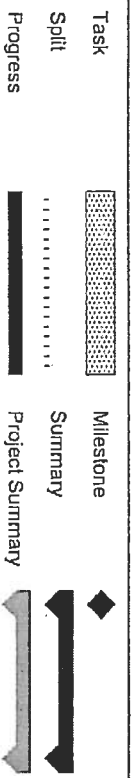
cc John Holland, City of Clare  
File

Enclosure

Clare WWTF Project Summary Schedule

ID	Task Name	Duration	Start	Finish	10 Mar	11 Apr	12 May	13 Jun	14 Jul	15 Aug	16 Sep	17 Oct	18 Nov	19 Dec	20 Jan	21 Feb	22 Mar	23 Apr	24 May	25 Jun	26 Jul	
1	Pilot study Bid approved	1 day?	Fri 7/9/10	Fri 7/9/10																		
2	Pilot study Completed	44 days	Thu 4/15/10	Tue 6/15/10																		
3	Report issued on Pilot study results	14 days	Mon 6/21/10	Thu 7/8/10																		
4	Design of WWTF Improvements	32 days	Fri 7/9/10	Mon 8/23/10																		
5	Bidding of WWTF Improvements	29 days	Tue 8/17/10	Fri 9/24/10																		
6	Receive Bids and Recommend Contract award	1 day	Fri 9/24/10	Fri 9/24/10																		
7	Rural Development Loan Closing	1 day	Fri 10/8/10	Fri 10/8/10																		
8	Award Construction Contracts/Order Equipment	5 days	Mon 10/11/10	Fri 10/15/10																		
9	Construction of WWTF Improvements	180 days	Mon 10/25/10	Fri 7/1/11																		
10	WWTF close out of project	21 days?	Fri 7/1/11	Fri 7/29/11																		

Project: Clare WWTF Summary Sched  
Date: Mon 7/12/10



## ZONING BOARD OF APPEALS APPLICATION FOR VARIANCE

NAME: <u>MARILYN A. KUEBLER</u>		
ADDRESS: <u>406 E. FIFTH ST (BUSINESS)</u>		
CITY: <u>CLARE</u>	STATE: <u>MI</u>	ZIP: <u>48617</u>
HOME PHONE: <u>(989) 386-3536</u>	WORK PHONE: <u>(989) 386-6200</u>	
WIRELESS: <u>(989) -</u>	PAGER: <u>( ) -</u>	
A VARIANCE IS REQUESTED FOR PROPERTY LOCATED AT WHAT ADDRESS (if no address, please include subdivision, lot/block number, or meets/bounds description):		
TYPE OF VARIANCE: <input checked="" type="checkbox"/> USE VARIANCE <input type="checkbox"/> DIMENSIONAL VARIANCE <small>(attach drawing please)</small> <input type="checkbox"/> ' side setback <i>all attached</i> <input type="checkbox"/> ' front setback <input type="checkbox"/> ' rear setback		
The Zoning Board of Appeals (ZBA) will consider your request for a zoning variance in a public meeting following a noticed public hearing. The ZBA generally considers the standards listed on the attached sheet and other matters they believe specifically relevant or pertinent to the unique circumstances of your request.		
Signature of Applicant: <u>Marilyn A. Kubler</u>		Date: <u>7/6/2010</u>
ZBA fee of \$ <u>paid</u>	Received on: <u>all ready paid</u>	By: _____
I hereby certify that the variance request was acted on by the Clare Zoning Board of Appeals on / / . The variance request was: <input type="checkbox"/> Approved <input type="checkbox"/> Denied With the following conditions (if any) attached:		
Certified By: _____		Date: _____

Please describe the purpose of the variance request. The explanation should include any unique circumstances or physical features of the property which justify the granting of a special exception.

*See ATTACHED*

*The minimum standards outlined herein are generally applied by the Zoning Board of Appeals in considering and reviewing all Use and Dimensional Variance requests submitted for approval within the City of Clare.*

**Standard.** Do special or unique conditions and circumstances exist which are peculiar to the land, structure, or building involved and which are not generally applicable to other lands, structures, or buildings in the same district?

*Answer.*

**Standard.** Does a literal interpretation of the provisions of this ordinance deprive the applicant of rights commonly enjoyed by other properties in the same district under the terms of this ordinance; is the variance the minimum necessary?

*Answer.*

**Standard.** Do the special conditions and circumstances result from the actions of the applicant?

*Answer.*

**Standard.** Is the granting of this variance in harmony with the general purpose and intent of the Chapter 51, Zoning and Planning, of the City's Ordinance Codes?

*Answer.*

**Standard.** Will granting of the variance be injurious to the neighborhood or otherwise detrimental to the general welfare of the the surrounding district or the City?

*Answer.*

**Standard.** Will the spirit of Chapter 51, Zoning and Planning, of the City's Ordinance Codes be observed, public safety secured, and substantial justice done if the variance is approved?

*Answer.*

The purpose of the variance request is because we are located four blocks from the main street in town where many people come to the city and have no idea that we even exist. We have been in business for a period of one year, we opened our doors on June 22, 2009. Many people come to our business who have been all over town looking for our building they stop at other businesses to find out how to get to us. It happens almost daily. When people drive into Clare on US 10, the way the building sits on the property, they have no idea that we are an open restaurant. The building sits on an angle

A literal interpretation of the provisions of this ordinance deprives us the right commonly enjoyed by other properties in the same district under the terms of this ordinance, the variance is necessary. There are several breadboard signs in use downtown advertising their businesses. Your law states that a business has to be in the first block of McEwan street. A business in the 2<sup>nd</sup> block also has 3 breadboard signs. This was brought up at the November meeting and the signs are still in use.

The special conditions and circumstances result from the actions that I have had to take on my own. I have had to hire people to advertise downtown for us. It has proven positive. Many people have come to our business because of live signage. It is very expensive but we have to do it until we can obtain permission for signage on the sidewalk.

Public advertisement is very important to a business owner. We had no idea that we would have such a hard time in obtaining permission to advertise in the downtown area when we opened the business. We had to invest over \$30,000 of our retirement money before we could even open the doors, because we believed in our city and we thought that we could make it go. A restaurant is a very expensive business to run.

We simply need the support from this city. I made out my initial application in May 2009. Please accept this variance request.

The signage that we would use downtown would be professional. It would be changed during the different seasons.

The granting of the variance is in harmony with the general purpose and intent of the Chapter 51, Zoning and Planning, of the City's Ordinance Codes.

The granting of the variance will not be injurious to the neighborhood or otherwise detrimental to the general welfare of the surrounding district or the City.

The Spirit of Chapter 51, Zoning and Planning, of the city's Ordinance Codes will be observed, public safety secured and substantial justice done if the variance is approved.

Sincerely,

Marilyn A. Kuebler

Large Proof

*36 x 24*

*Template designed to fit standard sandwich board frame & are fully customizable*

# Marilyn's Breakfast & Lunch

**Come Back To the 50's  
We Care About You  
406 E. Fifth Street**

*background red* → **NOW OPEN**

BuildASign.com™ Proof X Close Proof