

CITY OF GAINESVILLE

Inter-Office Communication

TO: Wayne Bowers
City Manager

DATE: March 21, 2002

FROM: Teresa Scott
Public Works Director

SUBJECT: SW 2nd Street - Traffic Flow for Parking Garage

The Citizen Advisory Committee (CAC) of the Metropolitan Transportation Planning Organization (MTPO) has raised a concern about the conversion of SW 2nd Street between West University Avenue and SW 1st Avenue from one-way northbound to two-way traffic in conjunction with the new city parking garage to be constructed in City Parking Lot 10. They were concerned that the additional traffic on this street would result in more traffic creeping into the crosswalk on the south side of the West University Avenue and SW 2nd Street intersection which would create additional conflicts with pedestrians.

The City Commission approved the conversion of SW 2nd Street to a two-way street from SW 2nd Avenue to West University Avenue when they approved the conceptual plan for the new parking garage on July 23, 2001. SW 2nd Street from SW 4th Avenue to SW 2nd Avenue was approved for conversion to a two-way street in conjunction with the new County Courthouse. This conversion will make the parking garage and the parking lot/service area on the west side of the Courthouse more accessible and reduce the number of turning movements needed to access these two facilities.

In response to the concerns raised by the CAC, the Public Works Department reviewed this issue. The attached document provides an analysis of three options for traffic flow around the parking garage. Based upon this analysis, we maintain our recommendation that it is best to convert SW 2nd Street to a two-way street from SW 4th Avenue to West University Avenue. A copy of this information is being forwarded to the CAC for their information. Please contact me if you have any questions or need additional information.

Copies: ✓ Brian Kanely, P.E., Transportation Services Manager
CAC Members
Marlie Sanderson, NCFRPC

Analysis by Public Works Department

The Public Works Department-Transportation Services Division has reviewed three options for traffic flow on SW 2nd Street in providing access to the proposed parking garage:

- Option 1: Two-way street
- Option 2: One-way street southbound
- Option 3: One-way street northbound

These options have been analyzed with respect to three issues; (1) approach/departure routes to the parking garage on University Avenue, (2) street width and on-street parking and (3) northbound right turn conflicts with pedestrians at West University Avenue and SW 2nd Street.

Approach/departure routes to the parking garage on University Avenue

The attached tables document the number of turns motorists will have to make as they approach/depart the parking garage from the east and west on University Avenue. The tables are summarized below.

Option 1 (two-way street):	6 turns
Option 2 (one-way southbound):	10 or 12 turns
Option 3 (one-way northbound):	8 turns

The number of turns that motorists have to make is very important because all the intersections in this area experience significant pedestrian traffic, particularly at night. As the southwest quadrant continues to redevelop, the pedestrian activity at these intersections will increase. Pedestrian safety at West University Avenue and 2nd Street (and all intersections in the downtown area) needs to be maximized but pedestrian safety throughout the southwest quadrant should not be negatively impacted in an effort to make one intersection safer. Options 2 and 3 increase the number of turns motorists will have to make as they approach/depart the parking garage from the east and west on University Avenue. Option 1 requires the fewest number of turning movements.

Street width and on-street parking

The CAC raised concerns about the width of SW 2nd Street. The drawing in the attachments documents street widths. The pavement width of SW 2nd Street is 20.4 feet just north of SW 1st Avenue and 24.2 feet just south of West University Avenue. SW 2nd Street has adequate width for two-way traffic. The conversion of SW 2nd Street to a two way street will require the removal of the five on-street spaces on the east side of SW 2nd Street between SW 1st Avenue and West University Avenue. The City Commission discussed this issue at the July 23, 2001 meeting. The City Commission concluded the removal of the on-street parking was necessary to facilitate access to and from the parking garage. The overall net increase in the number of parking spaces in the southwest quadrant with the new parking garage is 406 spaces.

Northbound right turn conflicts with pedestrians at West University Avenue and SW 2nd Street

To quantify and analyze this issue, the Public Works Department obtained traffic data at the intersection of West University Avenue and SW 2nd Street (data sheets attached). This data was northbound vehicle turning movement counts, vehicles stopping/creeping in the crosswalk in each northbound travel lane and how many first in line vehicles in the right only lane violated the no turn on red violation. This data was obtained from 6:00 a.m. on Friday, March 15 through 2:30 a.m. Saturday, March 16, 2002 (20.5 hours). This represents typical hours the parking garage would be open.

Vehicle turning movements:

There are currently two northbound lanes on SW 2nd Street approaching West University Avenue, a right only lane and a shared left/through lane. The traffic volumes were:

Right – 468 (27%)

Through – 342 (19%)

Left – 956 (54%)

The travel lane volumes were right only, 468 vehicles (27%) and left/through, 1,298 vehicles (73%).

Vehicles stopping/creeping in the crosswalk:

The number of first in line vehicles stopped in each travel lane per traffic signal cycle that stopped/crept into the crosswalk was recorded.

Right only lane: 122 out of 289 (44%)

Left/through lane: 44 out of 475 (9%)

This data demonstrates that the vehicles in the left/through lane had significantly better compliance with respect to not stopping/creeping into the crosswalk.

The above data is important because Option 1 would require all northbound traffic in this block of SW 2nd Street to use one lane. This would result in a significant majority of traffic signal cycles where the first vehicle in line would go straight or left. Since the straight/left vehicles only violated the crosswalk 9% of the time, the problem of vehicles violating the crosswalk would significantly decrease with Option 1. The number of times vehicles in the right only lane turned right on red in violation of the turn restriction was 23 % (107 of 468 vehicles). This is not unexpected because a very common citizen complaint received by the Public Works Department is right turning vehicles failing to yield to pedestrians at signalized intersections.

Comparison of Options

Option 1 – Two-way traffic: This option will significantly reduce the number of vehicles that stop/creep into the crosswalk on the south side of the intersection of West University Avenue and SW 2nd Street because all northbound traffic will be in one travel lane. It also results in the fewest number of turns (6) for vehicles approaching/departing the parking garage from/to University Avenue, which results in the least number of overall vehicle/pedestrian conflicts. This option does require the removal of five on street parking spaces between West University Avenue and SW 1st Avenue.

Option 2 – One-way southbound: This option would eliminate the conflict at West University Avenue and SW 2nd Street. However, it results in the most turns (10 or 12) for vehicles approaching/departing the parking garage from/to University Avenue, which results in additional vehicle/pedestrian conflicts in the southwest quadrant. With this option, the five on street parking spaces on SW 2nd Street between West University Avenue and SW 1st Avenue would be retained.

Option 3 – One-way northbound: This option would have the same impact as Option 1 if all traffic were forced into one northbound lane. If the current lane configuration remained, the existing conditions would be unchanged. This option results in more turns than option 1 and less turns than option 2. With this option, the five on street parking spaces on SW 2nd Street between West University Avenue and SW 1st Avenue would be retained.

Public Works Department Recommendation

The Public Works Department recommends that Option 1 (two-way traffic) be maintained as the traffic circulation pattern for SW 2nd Street between West University Avenue and SW 4th Avenue. Option 1 results in the fewest number of turns motorists will have to make as they approach/depart the parking garage from/to University Avenue. Option 1 will also significantly reduce the vehicle/pedestrian conflict the CAC was concerned about.

To address the violations of the no turn on red restriction, the Public Works Department will investigate the feasibility of whether or not internally illuminated NO TURN ON RED signs can be installed at this intersection. These would be similar to the signs used at school zones throughout the city. The traffic signal installation at this intersection is quite old and installing the necessary underground conduits for the sign may present significant problems.

WEST BOUND LFT -
TURN PROHIBITED

TURN PROHIBITED

W. UNIV. AVE

West University Avenue

West University Avenue

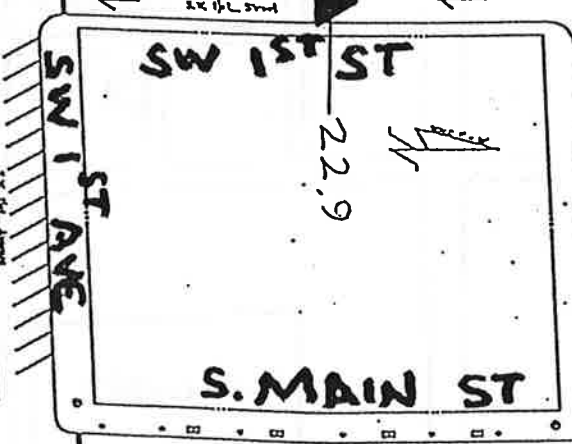
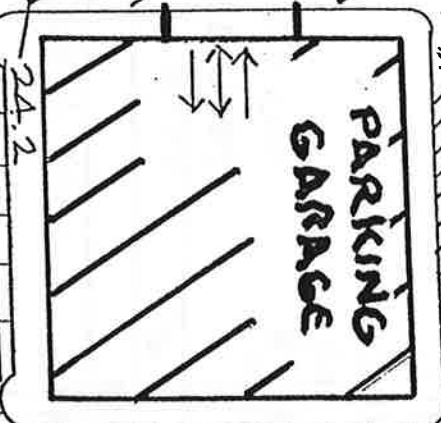
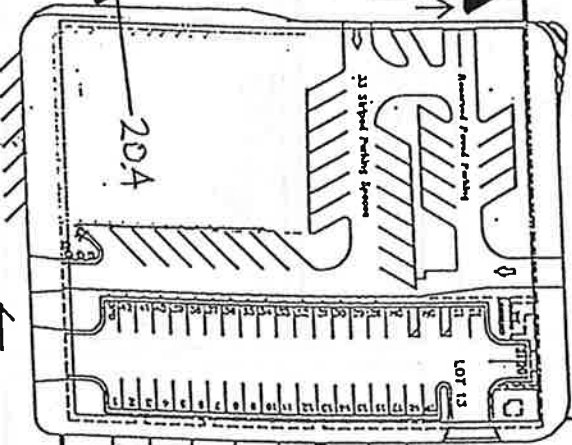
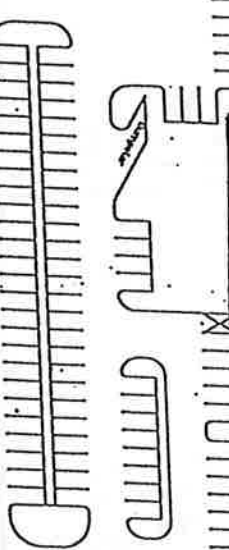
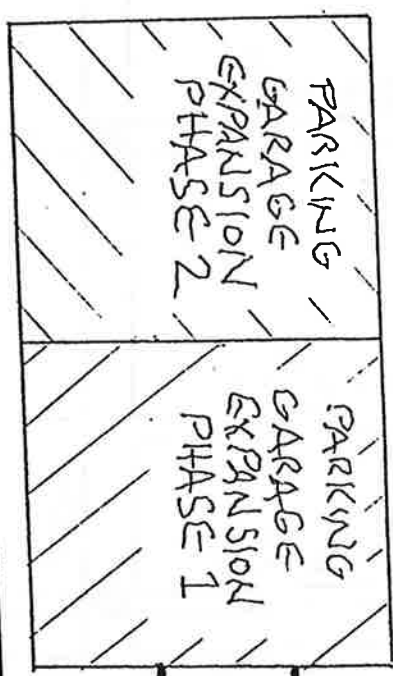
SW 3RD ST

APPROVED
PARKING
GARAGE
PLAN

24.2

SW 2ND ST

Private Front Parking
112 Street Parking Spaces



SW 3RD Avenue

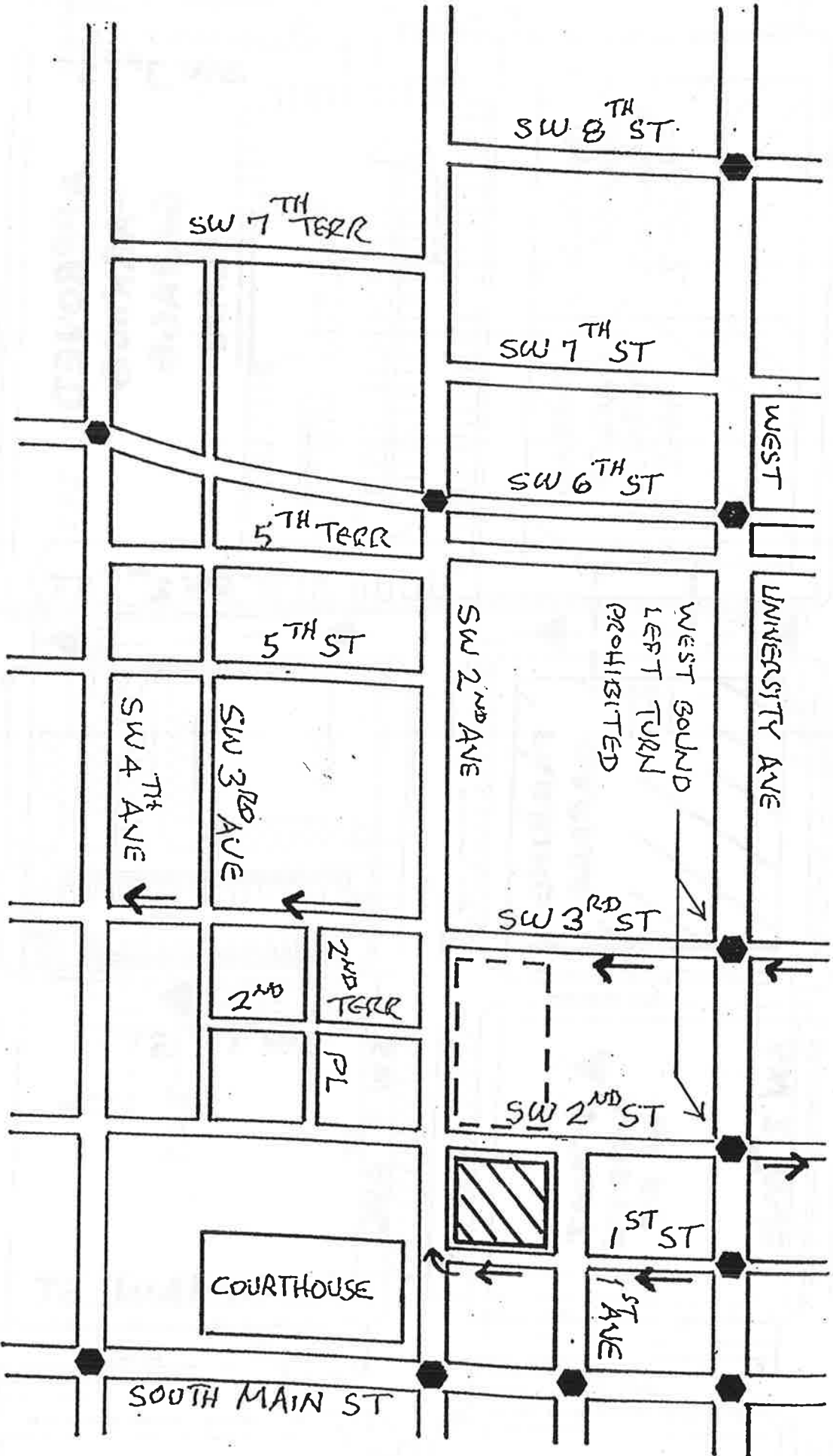
SW 1st Avenue

SW 1st Avenue

SW 2nd Avenue

South Main Street

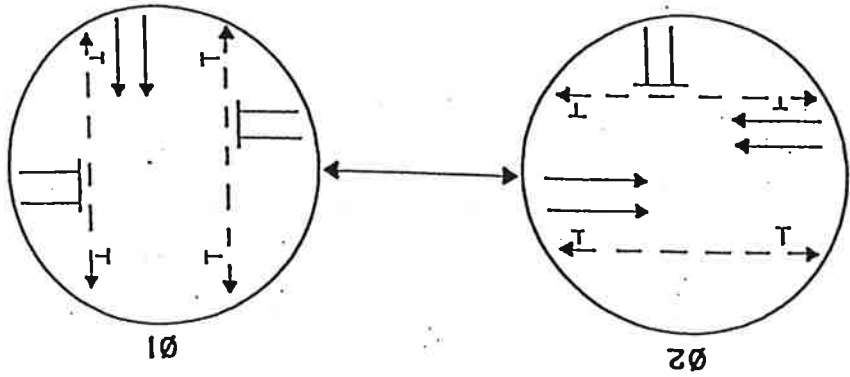
SW QUADRANT - STREET CIRCULATION



◆ TRAFFIC SIGNAL
 → ONE WAY STREET

▨ PARKING GARAGE
 [- -] PARKING GARAGE EXPANSION

N
 1" = 300 FT



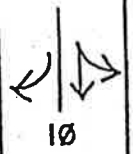
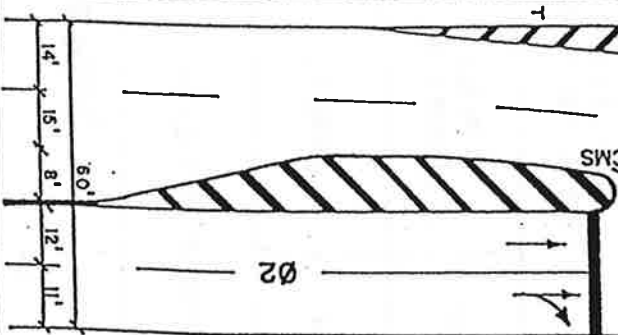
NODE 0740



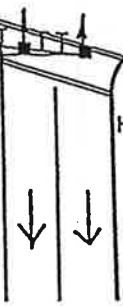
CMS OPEN

WEST UNIVERSITY AVENUE

S.W. 2ND STREET



Ø2



Section 1:
2 Way

SW 2nd Street

(City Commission Approved Plan)

	From / To West On University Avenue		From / To East On University Avenue	
	To Garage	From Garage	To Garage	From Garage
Turn 1	Right on SW 2nd St.	Left From SW 2nd St to WUA	Left on Main St. or SW 1st St.	Right on WUA
Turn 2	-	-	Right on SW 1st Ave. or SW 2nd Ave.	-
Turn 3	-	-	Left / Right on SW 2nd St.	-
Turn 4	-	-	-	-
Total Turns	1	1	3	1
	(2)		(4)	

**Option 2:
One-Way SW 2nd St.
Southbound from WUA to
SW 1st Ave.**

		From / To West On University Avenue		From / To East On University Avenue	
	To Garage	From Garage		To Garage	From Garage
Turn 1	Right on SW 2nd St.	a) Rt on SW 2nd Ave. b) Rt on SW 1st Ave. c) Rt on SW 1st Ave.		Left on Main St. or SW 1st St.	Right on SW 1st Ave.
Turn 2	-	a) Rt on SW 8/10/12/13 Sts. b) Rt on SW 1st ST. c) Left on Main St.		Right on SW 1st Ave. or SW 2nd Ave.	Left on Main St.
Turn 3	-	a) Left on WUA b) Rt on SW 2nd Ave. c) Left on WUA		Left / Right on SW 2nd St.	Right on EUA
Turn 4	-	b) Rt on SW 8/10/12/13 Sts.			
Turn 5	-	b) Left on WUA			
Total Turns	1	a) 3 b) 5 c) 3		3	3
		4 or 6		6	

Motion 3:
 One-Way SW 2nd St. Northbound
 from WUA to
 SW 1st Ave.

	From / To West On University Avenue		From / To East On University Avenue	
	To Garage	From Garage	To Garage	From Garage
Turn 1	Rt on SW 3, 8, 10, 12 or 13 Sts.	Left on WUA	Left on Main St. or SW 1st St.	Right on WUA
Turn 2	Left on SW 2nd Ave.		Right on SW 1st Ave. or SW 2nd Ave.	
Turn 3	Left on SW 2nd St.		Left / Right on SW 2nd St.	
Turn 4	-			
Total Turns	3	1	3	1
	4		4	

CITY OF GAINESVILLE - TURNING MOVEMENT STUDY

LOCATION: W Univ Ave / W 2 St

DATE: 3-15-02

INTERVAL LENGTH: _____

WEATHER: Light

OBSERVER: PRD, CD, JH, JE, RV, SH, RS

TIME PERIOD	SOUTHBOUND				WESTBOUND				NORTHBOUND			EASTBOUND				
	1	2	3	4	5	6	7	8	9	Right	Thru	Left	13	14	15	16
										10	11	12				
6-7 am										1	1	0				
7-8										0	2	2				
8-9										9	3	7				
9-10										12	13	23				
10-11										13	10	23				
11-12 pm										20	25	28				
12-1										35	29	34				
1-2										25	24	25				
2-3										20	17	24				
3-4										26	25	40				
4-5										24	24	44				
5-6										18	27	60				
6-7										29	11	30				
7-8										18	10	27				
8-9										13	6	48				
9-10										29	9	44				
10-11										38	27	85				
11-12 am										37	31	94				
12-1										41	28	85				
1-2										35	16	131				
2-3 am *										25	4	102				
COUNT STOPPED AT 2:30am (RUBEN OFFICE) STREET CLOSED AT 2:40am									TOTALS	468	342	956				
									GRAND TOTAL			1766				

Location: W UNIV AVE / W 2 ST (NB ONLY)

Date: 3-15-02

Weather: WARM, MILD

Day: FRIDAY

By: PD, CD, JH, JF, RU, SH, RS

LEFT / THRU LANE

RIGHT LANE

TIME	STOPPED IN CROSSWALK		STOPPED IN CROSSWALK		RIGHT ON RED (PROHIBITED)
	Yes	No	Yes	No	
6-7am	0	1	1	0	1
7-8	1	3	0	0	0
8-9	1	6	3	4	2
9-10	2	18	5	5	2
10-11	3	12	3	4	3
11-12pm	0	19	2	5	7
12-1	3	25	12	8	6
1-2	2	21	15	7	12
2-3	0	22	8	6	6
3-4	1	24	6	8	2
4-5	3	20	9	8	6
5-6	1	24	5	5	5
6-7	2	21	17	5	10
7-8	1	17	10	4	7
8-9	0	25	6	7	4
9-10	1	24	10	9	5
10-11	4	34	17	10	5
11-12am	1	51	7	10	2
12-1	4	29	14	8	8
1-2	14	22	13	6	13
* 2-3 am	0	13	4	3	1
COUNT STOPPED AT 2:30am (POWER OUTAGE) POWER OUT AT 2:02am STARTS COUNT AT 2:42am					
TOTALS	44	431	167	122	107