City of New Port Richey

Transportation Analysis

To Assess the Projected Impacts of the

SIMS PARK MASTER PLAN

By

Elizabeth Rodriguez & Associates

July 2014

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1.0 Introduction

The Sims Park Master Plan Project is a series of upgrades to Sims Park in New Port Richey, Florida. Upgrades proposed in the Master Plan include the playground demolition and relocation, restroom structure demolition and relocation, as well as additional recreational amenities. To accommodate the improvements, changes to the roadway network in the vicinity of the park have been proposed.

This report was commissioned by the City of New Port Richey to look at the traffic impacts of these proposed changes to the network. The study network for this analysis is bounded by the River on the west; Main Street on the South; Madison Avenue on the west; and Massachusetts Street on the north. **Exhibit 1** shows the study area.

As a part of this effort, the City has asked the consultant to analyze the changes; identify potential problem areas; and recommend mitigation – such as traffic calming measures. The City has also asked the consultant to measure vehicle speeds at key locations in the study area. That information is also included in this report.

SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

LEGEND

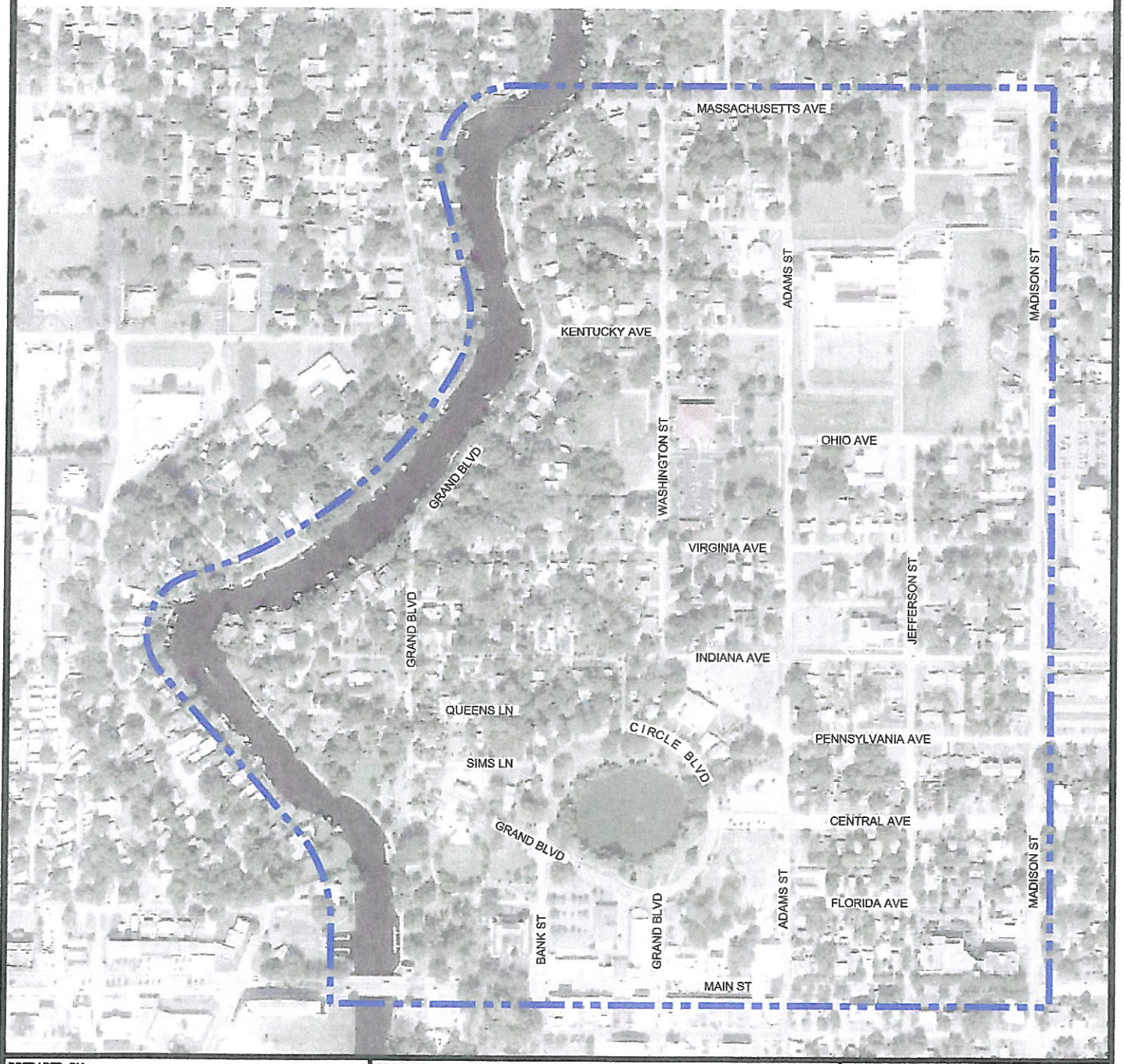
LIMITS OF STUDY AREA

0 500

(IN FEET)

1 Inch = 500 Feet

N W E S



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GENESIS FROM VISION TO REALITY 3810 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619 Phone 813.620.4500 Fax 813.620.4550 www.GenesisGroup.com	SIMS PARK TRAFFIC STUDY	DRAWN BY: JJB	DATE: JULY 2014
	SHEET NAME: STUDY AREA	CHECKED BY: DBF	REVISION DATE: -
		SHEET NUMBER:	EX-1

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2.0 Existing Conditions

This section of the report documents the collection of "Existing Conditions" data, including tube, or "machine" counts on roadway links; speed information for links; turning movement counts – counts of left, through, and right turners at intersections; heavy vehicle/truck counts; and school traffic information.

Existing Conditions information is used to establish a 'base line' against which the alternative transportation networks can be measured. Existing Conditions can also be looked at by themselves to see whether there are any existing problems within the study area that should be addressed.

2.1 Link Counts

Appendix A of this report contains traffic counts for selected links within the study area. The count locations are depicted in **Exhibit 2**. **Table 1** includes a compilation of link count information that was collected for this report.

Table 1: Existing Link Volumes

Link	Daily Volume	PM Volume	AM Volume
NB Adams s/o Ohio*	469	33	31
SB Adams s/o Ohio*	408	38	30
NB Madison s/o Ohio*	3301	299	240
SB Madison s/o Ohio *	2888	198	216
EB Main w/o River	6271	505	502
WB Main w/o River	6426	478	498
NB Grand s/o Indiana	1626	87	45
SB Grand s/o Indiana	1302	85	74
EB Massachusetts e/o Madison	4380	387	339
WB Massachusetts e/o Madison	4147	21	316
NB Bank s/o Grand	651	63	59
SB Bank s/o Grand	2239	82	96
NB Grand: Sims to Bank	1038	109	81
SB Grand: Sims to Bank	1258	104	89
NB Grand s/o Massachusetts	1068	112	95
SB Grand s/o Massachusetts	1226	112	96

**All of the counts in this table were taken after the end of the school year. There is separate count information from during the school year for the asterisked locations.*

SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

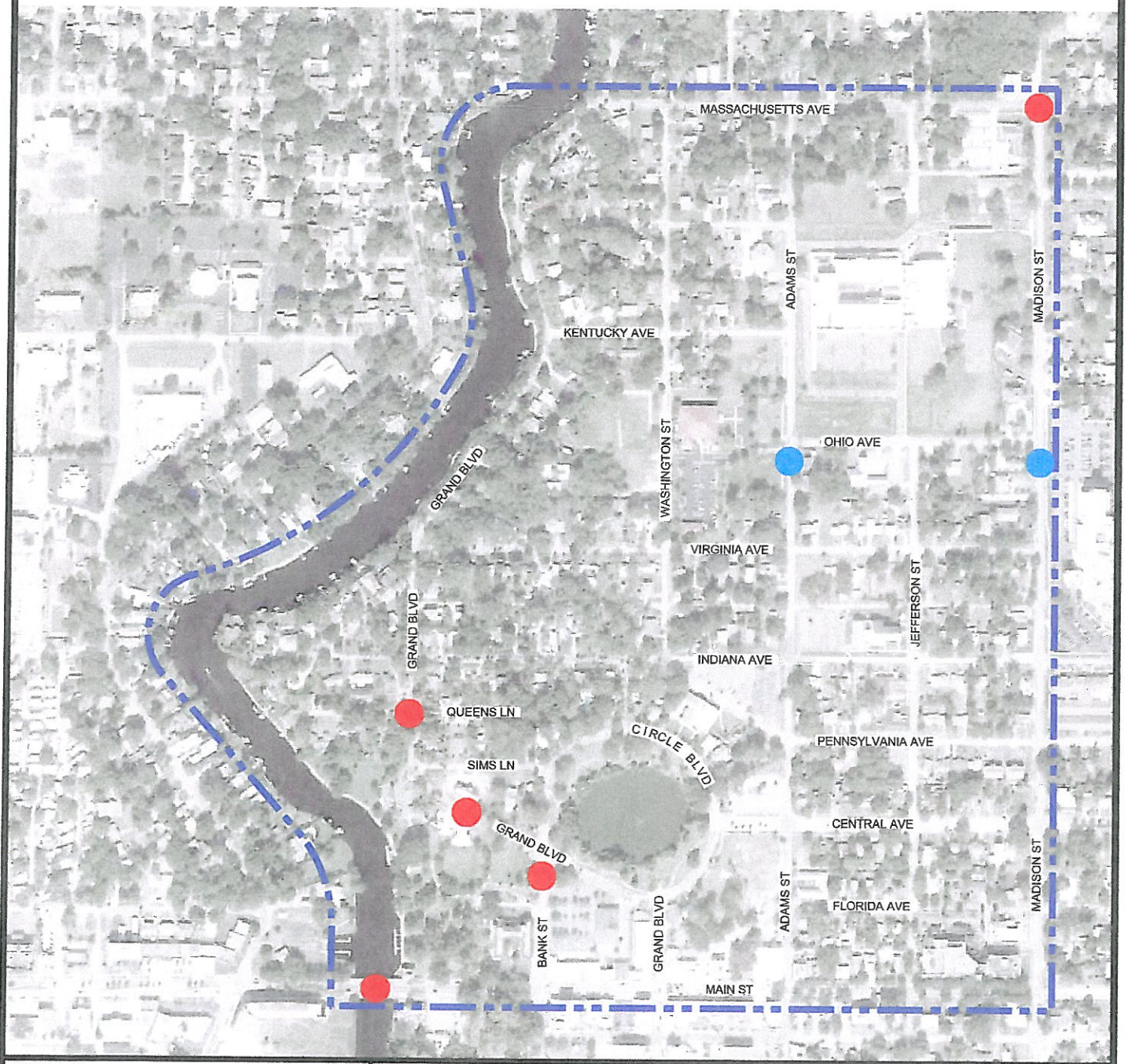
LEGEND

- TRAFFIC COUNT LOCATION
- TRAFFIC COUNT LOCATION COUNTED TWICE (UNDER SCHOOL & NON-SCHOOL CONDITIONS)

NOTE: DOES NOT INCLUDE TURNING MOVEMENT COUNTS, WHICH ARE ADDRESSED IN SECTION 2.2

0 500
(IN FEET)
1 Inch = 500 Feet

N W E S



PREPARED BY:

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4580 www.GenesisGroup.com
FL CA 00000660 FL LB 0006616 FL LC 26000262

PROJECT:

SIMS PARK TRAFFIC STUDY

SHEET NAME:

MACHINE / TUBE TRAFFIC COUNT LOCATIONS

DESIGNED BY: -	PROJECT # 5565-031
DRAWN BY: JJB	DATE: JULY 2014
CHECKED BY: DBF	REVISION DATE: -
SHEET NUMBER:	**EX-2**

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2.1.1 Speeds

Vehicle speed information was collected concurrently with the majority of the link counts, and so is available for all of the link locations depicted in **Exhibit 2**, other than Grand Boulevard: Sims to Circle. **Table 2** includes speed information as compared to the posted speeds on these facilities. The raw speed data is included with the link counts in **Appendix A**.

To determine whether speeds in the study area are a problem that need to be addressed, the reference book, "Traffic Calming: State of the Practice," ITE/FHWA, August 1999, was consulted. Chapter 8 – Warrants, Project Selection Procedures, and Public Involvement refers to the traffic calming warrants established by the City of Sarasota.

These warrants call for traffic volumes; anticipated cut-through traffic; pedestrians; and accidents to be studied – in addition to speeds – to see whether there is a problem that can be remedied through traffic calming. The speed warrant suggests that a problem may exist if the 85th percentile speed is 10 mph or more over the speed limit.

Table 2 compares the posted speeds to the 85th percentile actual speeds that were collected over a 48-hour period. Those roadway segments for which the 85th percentile speed exceeded the posted speed by more than 10 mph as the warrant indicated are shown in bold and italics.

Madison Street south of Ohio was shown to have speeds in excess of 10 mph higher than the posted speed limits. Recommendations regarding speeding are included in Section **6.0 – Future Conditions – Issues and Mitigation.**

TABLE 2: EXISTING SPEEDS

Roadway Segment	85th Percentile Speed	Posted Speed*
NB Adams s/o Ohio	29.92	25
NB Adams s/o Ohio – Day 2	30.39	25
SB Adams s/o Ohio	32.41	25
SB Adams s/o Ohio – Day 2	31.93	25
NB Madison /o Ohio	***37.40***	***25***
NB Madison s/o Ohio – Day 2	***37.18***	***25***
SB Madison s/o Ohio	***35.36***	***25***
SB Madison s/o Ohio – Day 2	***36.07***	***25***
EB Main west of bridge	31.63	25
EB Main west of bridge – Day 2	31.49	25
WB Main west of bridge	29.85	25
WB Main west of bridge	29.78	25
NB Grand s/o Indiana	30.03	25
NB Grand s/o Indiana – Day 2	29.74	25
SB Grand s/o Indiana	29.25	25
SB Grand s/o Indiana – Day 2	29.12	25
EB Massachusetts east of Madison	37.33	30
EB Massachusetts east of Madison – Day 2	36.85	30
WB Massachusetts east of Madison	36.25	30
WB Massachusetts east of Madison – Day 2	36.06	30
NB Bank n/o Grand	27.31	25
NB Bank n/o Grand – Day 2	27.64	25
SB Bank n/o Grand	26.59	25
SB Bank n/o Grand – Day 2	26.74	25

**On roadway segments that did not have a speed limit sign, 25 mph was assumed.*

2.2 Turning Movement Counts

Turning movement counts were conducted at the locations depicted in **Exhibit 3** of this report. The turning movement counts, themselves, are contained in **Appendix B** of this report. Counts were conducted for the a.m. and p.m. peak hours – from 7:00 to 9:00 a.m., and from 4:00 to 6:00 p.m. on either a Tuesday, Wednesday, or a Thursday to capture "average weekday" information.

2.2.1 Heavy Vehicles

Heavy vehicle information, or truck counts, were conducted concurrently with the gathering of the turning movements, and thus, the locations are shown on **Exhibit 3** of this report. The counts are included in the information in **Appendix B** of this report.

SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

LEGEND

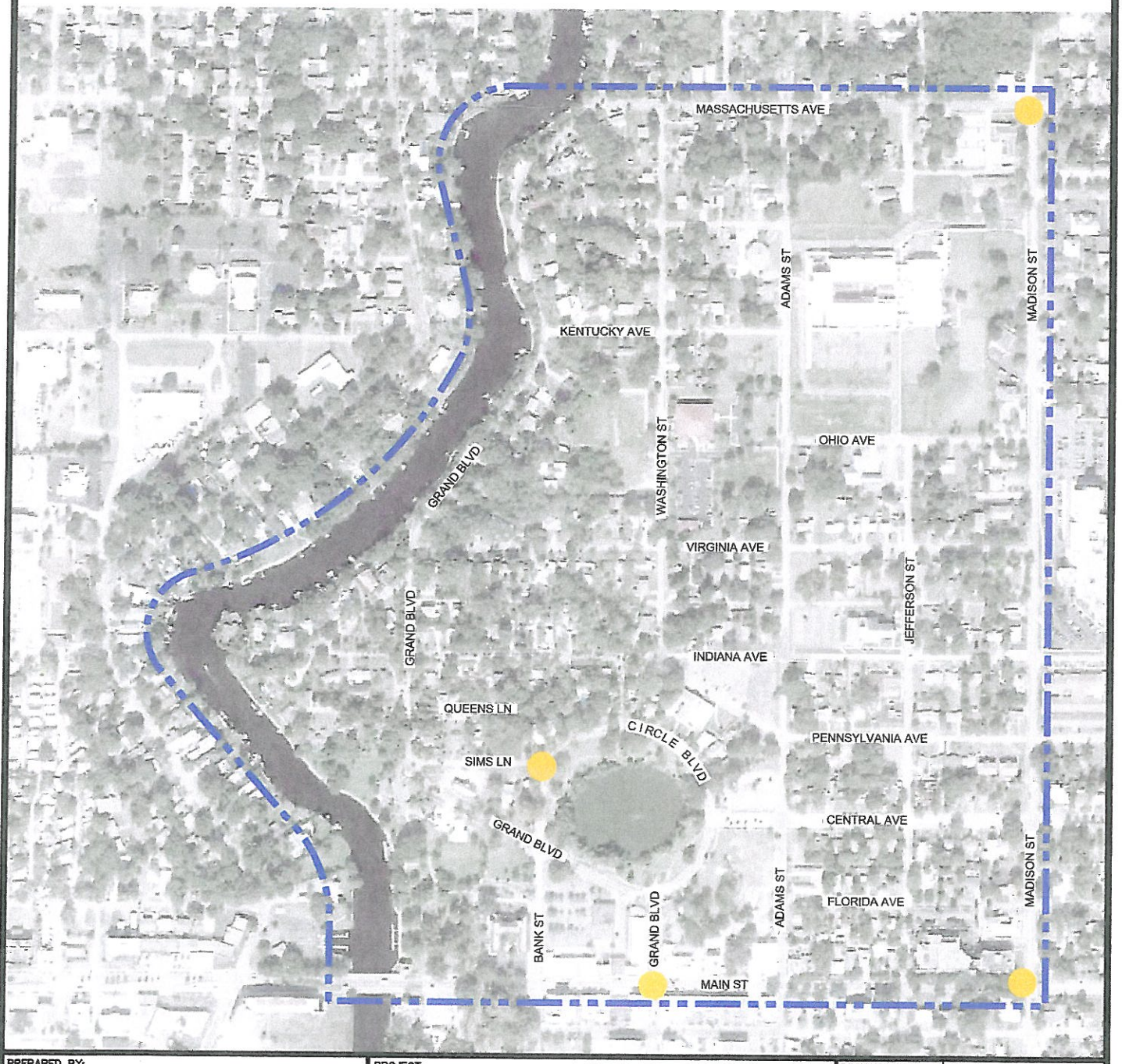
TURNING MOVEMENT COUNT LOCATION

0 500

(IN FEET)

1 Inch = 500 Feet

N W E S



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		DRAWN BY: JJB	DATE: JULY 2014
	SHEET NAME: TURNING MOVEMENT COUNT LOCATIONS (AM & PM)	CHECKED BY: DBF	REVISION DATE: .
		SHEET NUMBER: EX-3	

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2.3 School Information and Seasonal Adjustment Factors

The work effort for this report was begun just as the 2013-2014 school year was ending in Pasco County. Richey Elementary School is within the study area. In order to consider school traffic, counts were taken near the school and observations regarding school pickup queue lengths were made. These counts and observations constitute **Appendix C** of this report.

The counts show significant AM school traffic near the school, and this information was incorporated into the AM models discussed in **Section 4.0** of this report. The PM peak hour of the school was earlier than that of the network in general, and thus, school traffic was not factored in the PM models discussed in **Section 4.0.**

Seasonal adjustment factors, which are included in **Appendix C**, were considered in the model traffic. These are factors developed by the Florida Department of Transportation to account for tourist and "snow bird" traffic in traffic counts taken during various times of the year.

3.0 Existing Conditions – Model

Existing conditions models were developed for the AM and PM peak hours using SYNCHRO 9 traffic software. The existing roadways were modeled with existing traffic counts to provide "baseline" information against which alternative changes to the network could be measured.

Exhibit 4 depicts detail regarding existing traffic patterns in the area around the proposed park expansion – although the entire study area, as shown in **Exhibit 1**, has been modeled.

Appendix D contains AM existing conditions output from the existing conditions SYNCHRO model. **Appendix E** contains PM existing conditions output. This information is discussed in subsequent sections of this report in the context of how the network works under various scenarios as compared to existing conditions.

SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

LEGEND

TWO WAY TRAFFIC

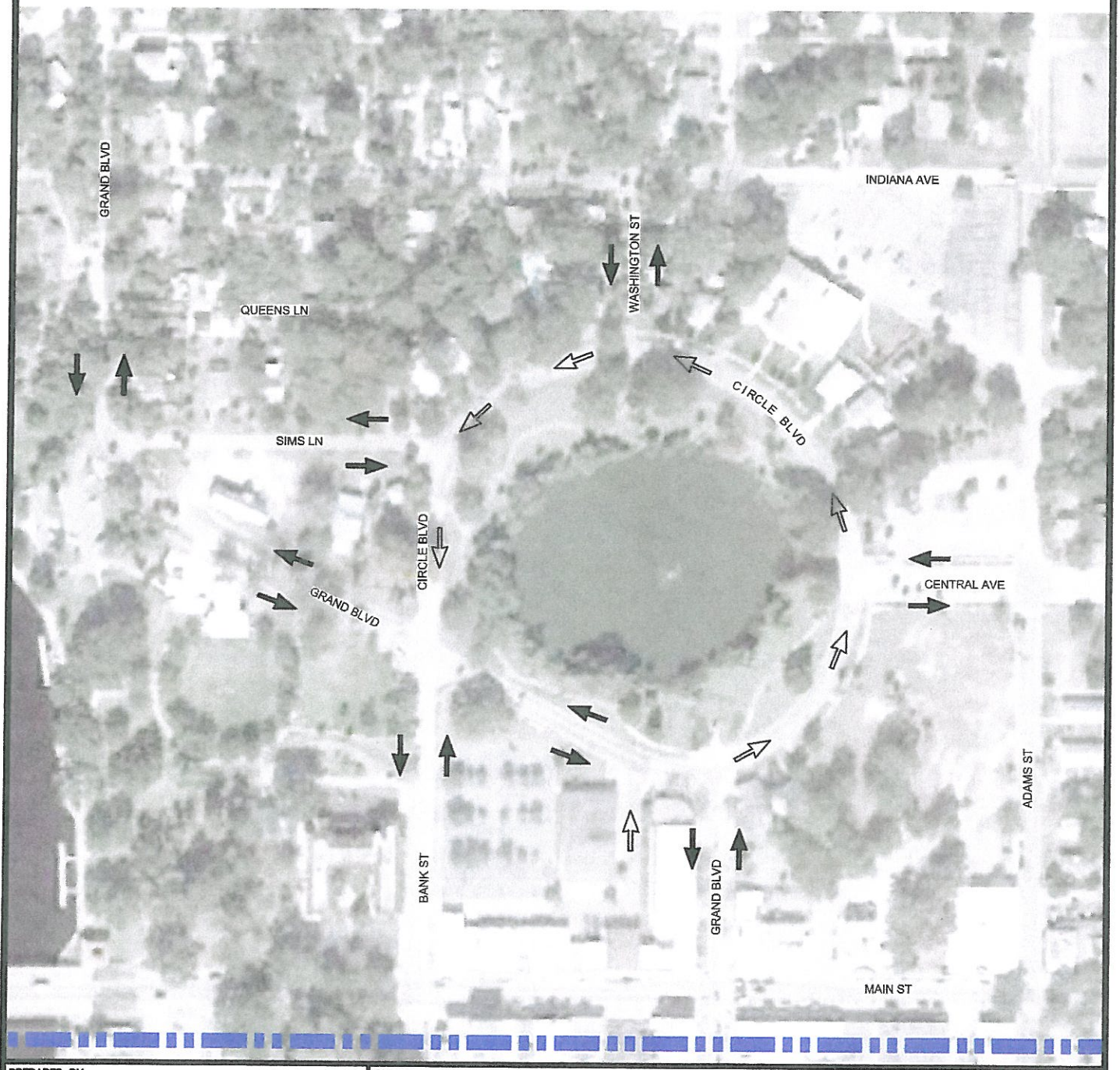
ONE WAY TRAFFIC

0 200

(IN FEET)

1 Inch = 200 Feet

N W E S



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	SHEET NAME: EXISTING ROADWAY NETWORK	CHECKED BY: DBF	REVISION DATE:
		SHEET NUMBER: EX-4	

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4.0 Future Conditions

Future conditions were modeled using SYNCHRO9 software. Changes to the roadway network and to the traffic volumes are explained in the following sections of this report.

4.1 Proposed Changes to Roadway Network

The Sims Park Master Plan document suggested several changes to the roadway network, as depicted in **Exhibit 5** – the "Alternative A" improvements. A lower cost subset of those improvements is also being analyzed, as depicted in **Exhibit 6** – the "Alternative B" improvements. **Exhibits 7** and **8,** show Alternatives C and D, respectively. These were Alternatives suggested for study by the City Manager and City staff, respectively.

SYNCHRO output from model runs is contained in the appendices to this report as follows: **Appendix F** contains Alternative A - AM output. **Appendix G** contains Alternative A - PM output. **Appendix H** contains Alternative B – AM output. And, **Appendix I** contains Alternative B – PM output.

SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

KEY NOTES

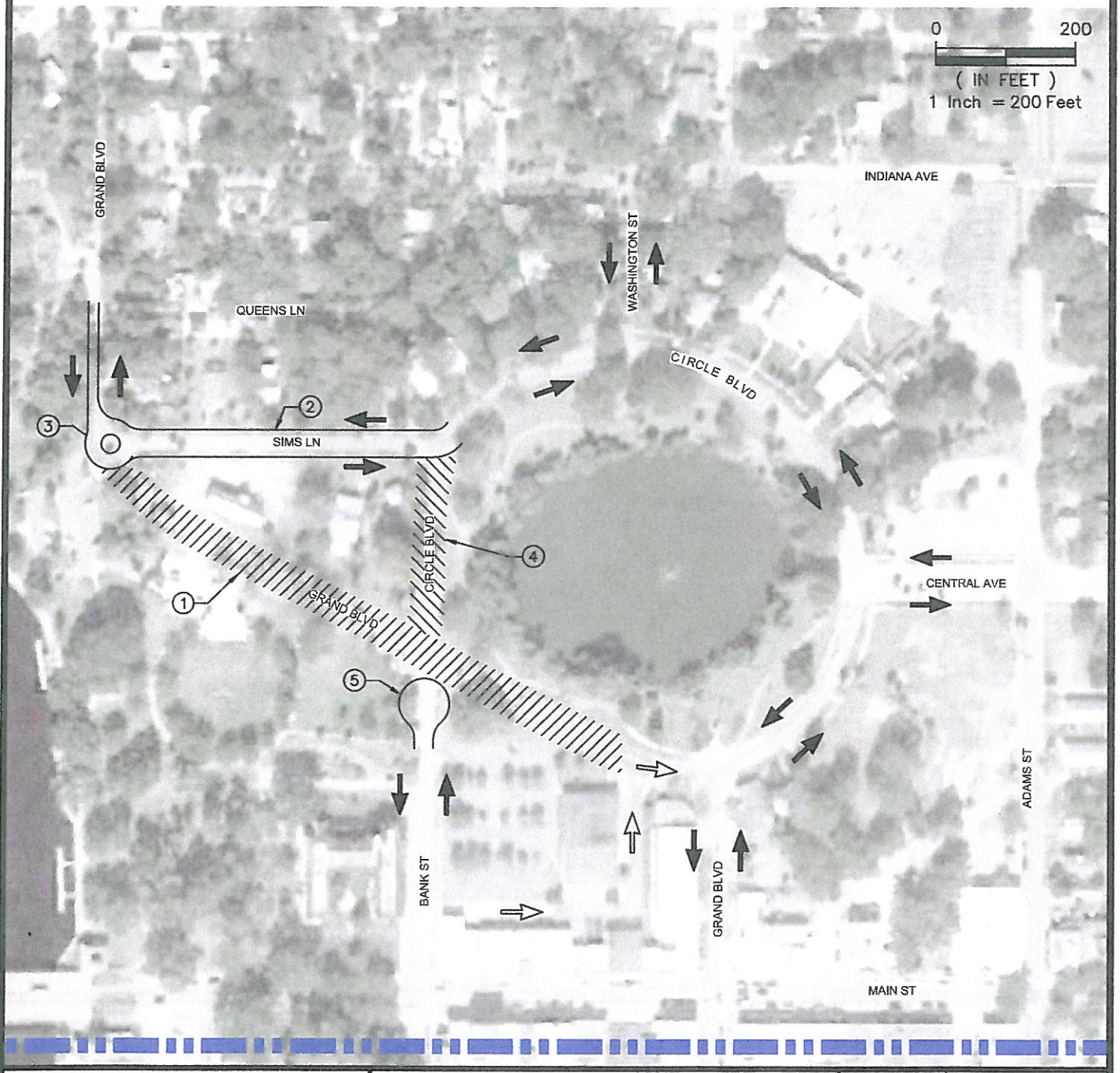
1. CLOSE GRAND BLVD SOUTH OF SIMS LN
2. WIDEN SIMS LN
3. POTENTIAL TRAFFIC CIRCLE AT SIMS LN & GRAND BLVD
4. CLOSE CIRCLE BLVD SOUTH OF SIMS LN
5. CUL-DE-SAC BANK ST

LEGEND

TWO WAY TRAFFIC

ONE WAY TRAFFIC

N W E S



PREPARED BY:

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.920.4500 Fax 813.920.4980 www.GenesisGroup.com
FL CA 00003669 FL LB 0006516 FL LC 26000262

PROJECT:

SIMS PARK TRAFFIC STUDY

SHEET NAME:

PROPOSED CHANGES TO ROADWAY NETWORK - ALTERNATE A

DESIGNED BY: -	PROJECT # 5565-031
DRAWN BY: JJB	DATE: JULY 2014
CHECKED BY: DBF	REVISION DATE: -
SHEET NUMBER:	**EX-5**

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SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

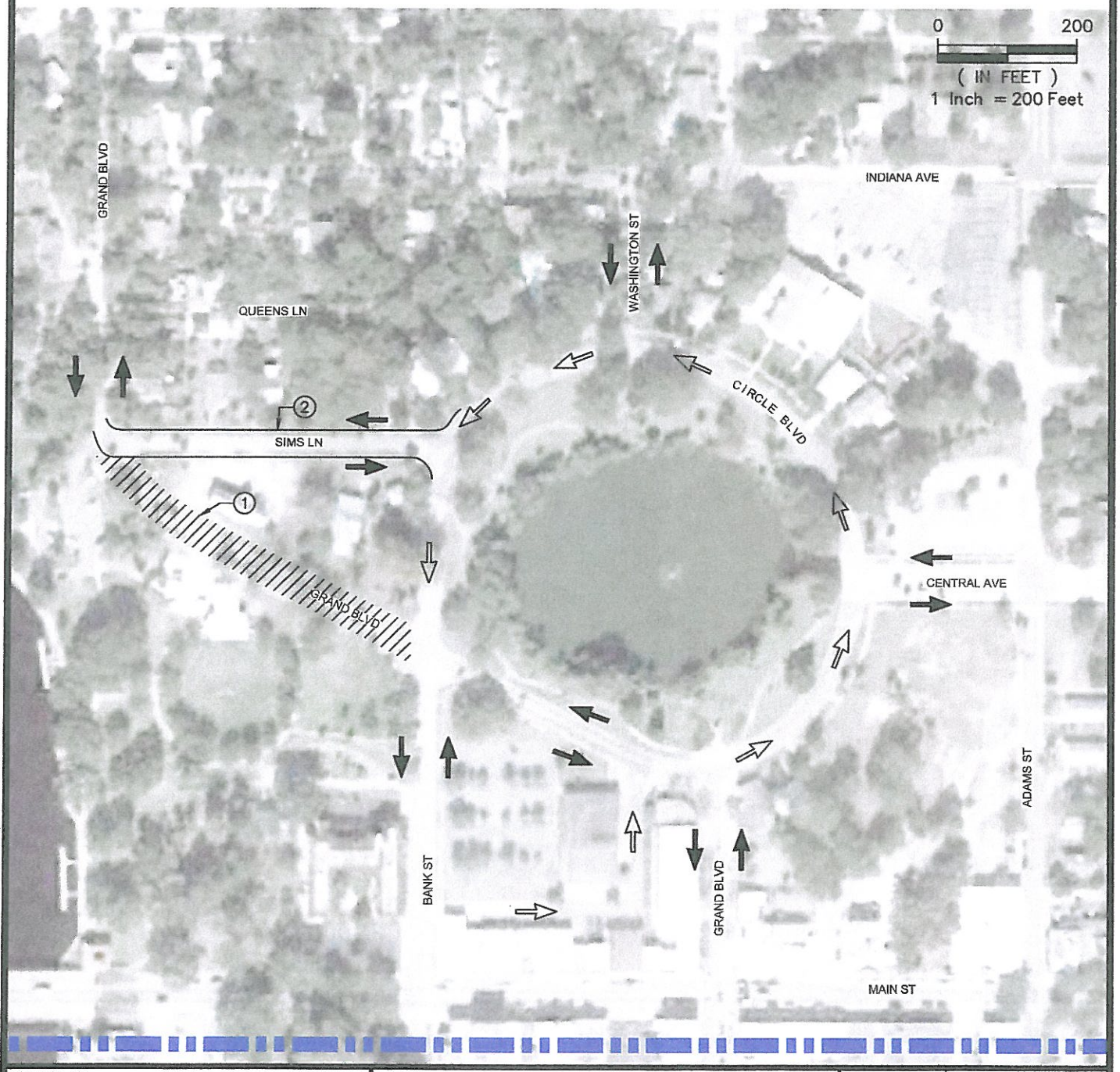
KEY NOTES

1. CLOSE GRAND BLVD FROM SIMS LN TO BANK ST
2. WIDEN SIMS LN

LEGEND

TWO WAY TRAFFIC

ONE WAY TRAFFIC



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		DRAWN BY: JJB	DATE: JULY 2014
	SHEET NAME: PROPOSED CHANGES TO ROADWAY NETWORK - ALTERNATE B	CHECKED BY: DBF	REVISION DATE: .
		SHEET NUMBER: EX-6	

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SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

KEY NOTES

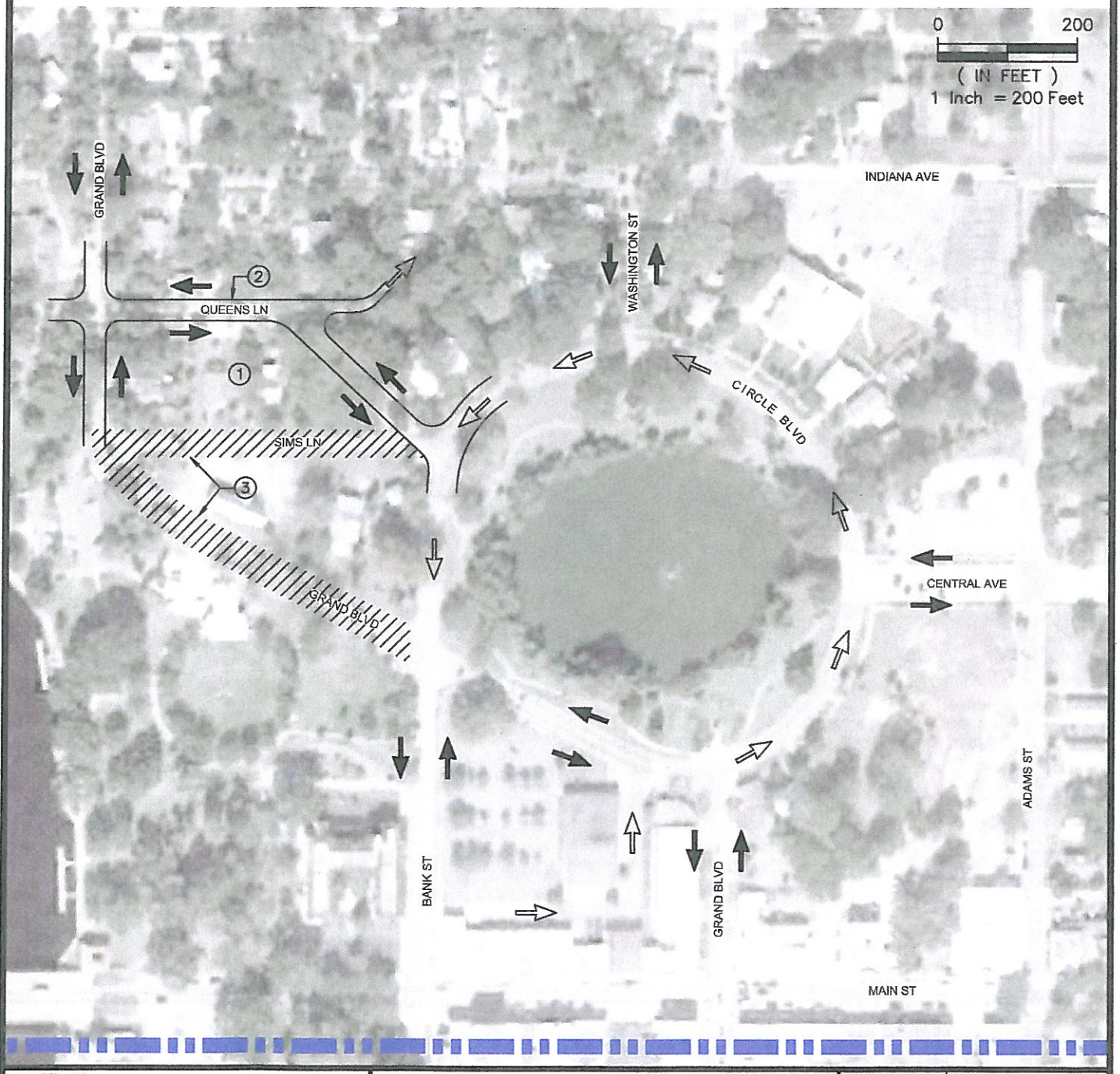
1. PURCHASE 7 LOTS
2. RECONSTRUCT A PORTION OF QUEENS LN FOR TWO WAY TRAFFIC AND CONNECT TO CIRCLE BLVD
3. CLOSE GRAND BLVD BETWEEN SIMS LN AND CIRCLE BLVD AND CLOSE SIMS LN

LEGEND

TWO WAY TRAFFIC

ONE WAY TRAFFIC

N W E S



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		DRAWN BY: JJB	DATE: JULY 2014
	SHEET NAME: PROPOSED CHANGES TO ROADWAY NETWORK - ALTERNATE C	CHECKED BY: DBF	REVISION DATE: .
		SHEET NUMBER: EX-7	

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SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

KEY NOTES

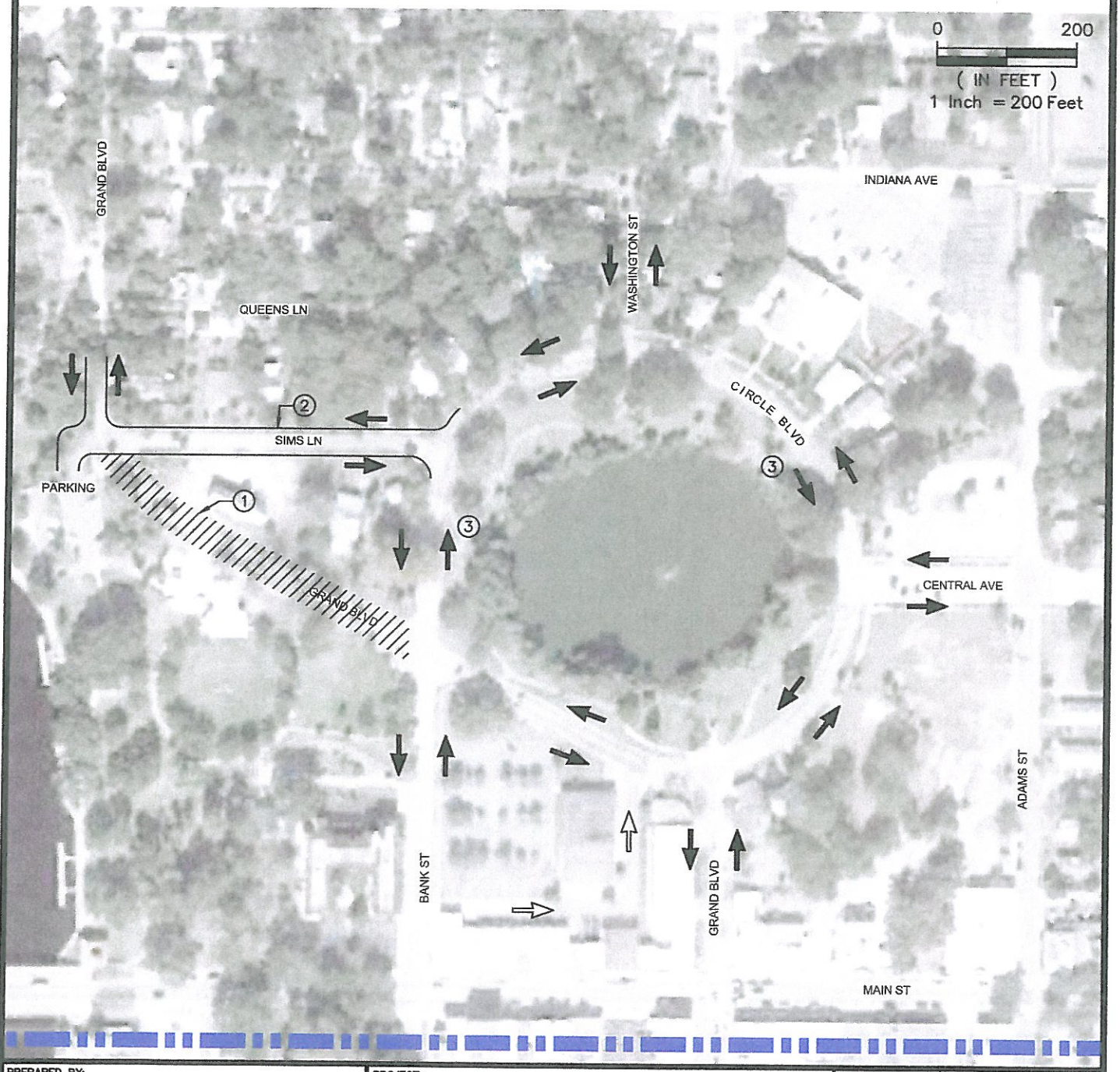
1. CLOSE GRAND BLVD BETWEEN SIMS LN AND BANK ST
2. WIDEN SIMS LN
3. CONVERT CIRCLE TO TWO WAY AND REMOVE ON-STREET PARKING

LEGEND

TWO WAY TRAFFIC

ONE WAY TRAFFIC

N W E S



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	SHEET NAME: PROPOSED CHANGES TO ROADWAY NETWORK - ALTERNATE D	CHECKED BY: DBF	REVISION DATE: .
		SHEET NUMBER: EX-8	

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4.2 Changing Traffic Patterns

The aforementioned changes in roadway segments will have corresponding changes to traffic assignment. These changes were made and input into the SYNCHRO model based upon manual gravity model assignment.

Briefly, gravity models hold that traffic will follow the fastest and/or shortest route to its destinations. These new routes were calculated to re-assign traffic displaced by the proposed changes to the roadway network.

Most notably, re-routed traffic on Grand Boulevard traveling to/from Main Street was assigned to Indiana Avenue and Washington Street via manual gravity model assignment.

4.2 Trip Generation of Sims Park

To test the future models relative to the various alternatives, the network was modified and traffic was re-distributed as explained above. However, a third set of changes was also made to the future networks.

The models needed to account for additional traffic to the park. This was accomplished by calculating the estimated trip generation of the existing park – trips that would already be accounted for in the existing traffic counts – and the trip generation of the proposed improvements, and then adding the additional trips into the future model simulations.

The existing park is approximately 15.5 acres. Using the Institute of Transportation Engineers "Trip Generation" Manual – 9th Edition, the trip generation of the existing park was calculated. Land Use Code 411 – City Park was used, and the resulting trip generation was 3 PM peak hour trips.

For the future conditions, the approximate acreage of the rights-of-way to be vacated via roadway removal was calculated as 1.03 acres. This was added to the existing acreage to yield an improved park of 16.53 acres. A new Land Use Code was also used. Land Use Code 435 – Multipurpose recreational facility was used. This is a relatively high trip generator, and the trip generation calculations resulted in 95 trips – or 92 net new park trips. This is a high number of PM peak hour trips, but it represents a "worst case scenario" in terms of future year traffic volumes.

5.0 Future Conditions – Issues and Mitigation

The SYNCHRO model runs and the speed study yielded several places within the study area that merit further study. These areas are depicted on **Exhibit 9,** and discussed below:

- Madison Street: The Speed Study component of this report showed that the 85th percentile speed is more than 10 mph higher than the posted speed. Follow up is needed on this issue. This could include enforcement, traffic calming, or raising the speed limit.
- Indiana/Washington Cut-through: Removing links of Grand Boulevard and the Circle south of Sims, as is proposed under Alternative A, makes it faster to travel to the circle – and then on to the south – via Indiana/Washington, than via Sims. Traffic calming- speed tables - and signage may be needed on Indiana: Grand to Washington and on Washington: Indiana to Circle.
- Grand/Sims Circle: A small circle is proposed at this intersection under Alternative A. The problem is that it makes traveling Sims – instead of Indiana/Washington as explained above – even slower and less attractive to through traffic.
- Traffic will be reduced at Main/Bank. The continuing need for the traffic signal there should be evaluated.
- Grand just north of Sims: If the segment just *south* of Sims is ultimately removed (as suggested under all four alternatives), care must be taken so that southbound traffic on the link to the north knows that changes have been made. Often when changes are made to the roadway network portable variable message boards are used to make residents aware of the changes. In the longer term traffic if there is deemed to be a continuing need, traffic operational (signage, striping, etc) and/or traffic calming (speed tables, etc.) can be considered for this purpose.
- Alternative C represents the fastest, and therefore most attractive alternative to Indiana-to-Washington cut through traffic.

SECTION 5, TOWNSHIP 26 SOUTH, RANGE 16 EAST

CITY OF NEW PORT RICHEY, FLORIDA

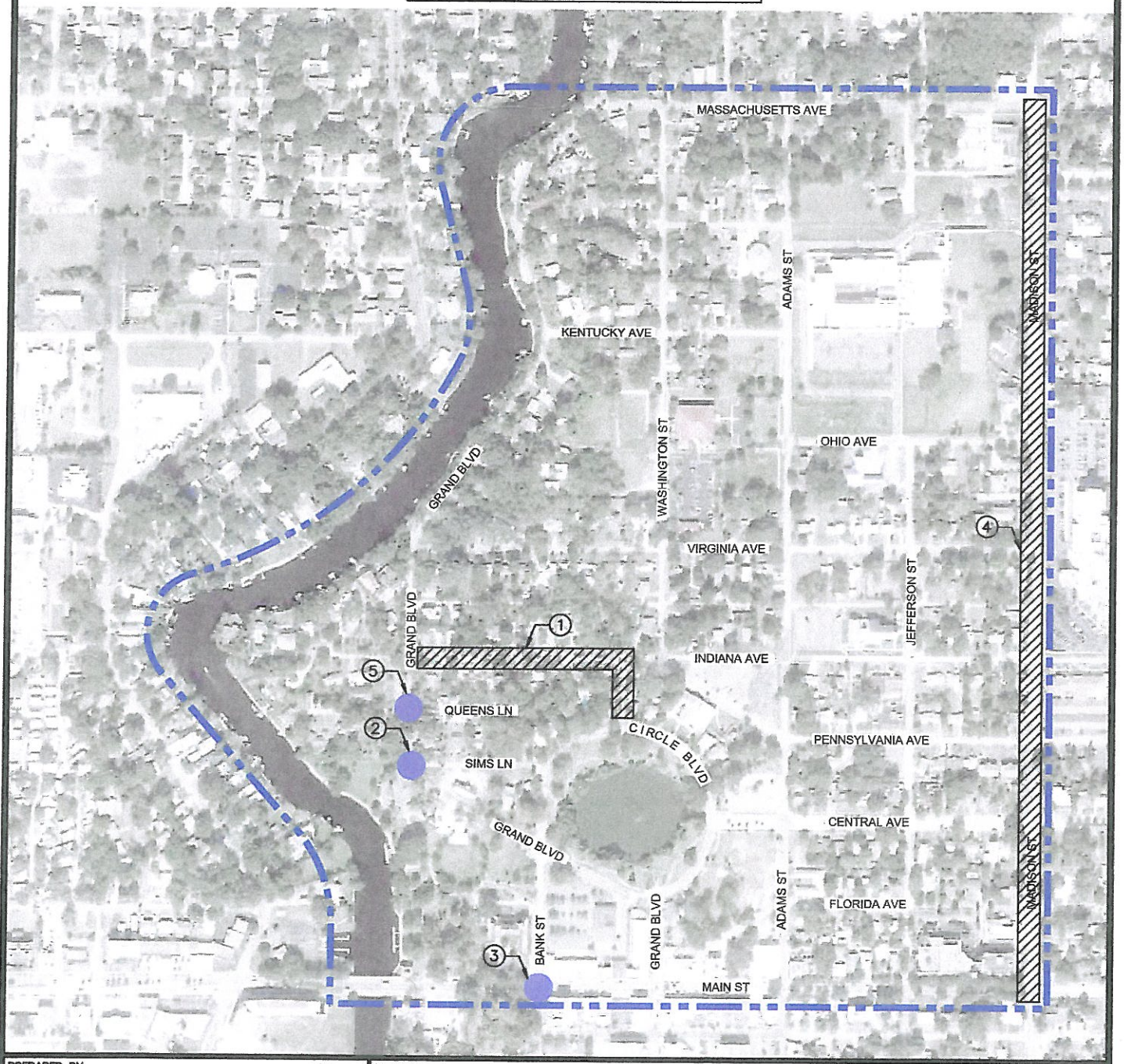
KEY NOTES

1. CUT THROUGH / TRAFFIC CALMING
2. PROPOSED CIRCLE MAY BE PROBLEMATIC
3. REVIEW CONTINUING NEED FOR SIGNAL
4. SPEEDING ISSUE
5. TRAFFIC CALMINIG / TRAFFIC CONTROL

0 500
(IN FEET)
1 Inch = 500 Feet

N W E S

NOTE: MITIGATION WILL VARY DEPENDING ON WHICH NETWORK ALTERNATE IS CHOSEN.



PREPARED BY:

GENESIS
FROM VISION TO REALITY
3910 US HIGHWAY 301 NORTH, SUITE 140, TAMPA, FL 33619
Phone 813.620.4500 Fax 813.620.4860 www.GenesisGroup.com
FL CA 00000060 FL LB 0006616 FL LC 26000202

PROJECT:

SIMS PARK TRAFFIC STUDY

SHEET NAME:

MITIGATION AND RECOMMENDATIONS

DESIGNED BY: .	PROJECT # 5565-031
DRAWN BY: JJB	DATE: JULY 2014
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SHEET NUMBER: **EX-9**	

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