PROPOSED
SPEED & VOLUME CONTROL MEASURES
FOR

MOONLIGHT DRIVE

JUNE 11, 2013

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HISTORY OF MOONLIGHT DRIVE

- Moonlight Drive is part of the Skyline Acres development which was filed for record in May 1971
- Moonlight Drive is shown as a street that ends at Lots 22&23
- Moonlight Drive road construction plans with a cul-de-sac at Lots 22&23 submitted for approval in May 1992 by City Engineer Ron Conway, P.E.
- Moonlight Drive revised to conform to construction plans submitted in August 1993 by City Engineer Ron Conway, P.E.
- Moonlight Drive was built to a Cul-de-sac with public ROW extending to the then property line (Lots 22&23)
- Moonlight Estates Final Plat was approved by the City Council in October 2000 (as well as P&Z)
  - Moonlight Drive was extended from the cul-de-sac to Mason Drive
  - Grant Drive was built from Mason Drive east to the boundary line
  - Pleasant Run was built from Mason Drive west to connect with Pleasant Run in Murphy Farms subdivision (connected at Lots 1 & 26; Phase 3, appears to be built around 1998)

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TIMELINE OF ACTION

- **Dec 2012:** Manual study conducted by COPs
- **Jan 3-31, 2013:** 1st MPD traffic study on Moonlight
- **Feb 1-13, 2013:** Analyzed data
- **Feb 11, 2013:** Meeting with residents on Moonlight
- **Feb 19, 2013:** On City Council agenda; Council directed staff to implement 2nd traffic study and STEP program
- **Feb 22-Mar 9, 2013:** 2nd MPD traffic study on Moonlight and Mustang Ridge Baseline Study
- **Mar 11-13, 2013:** Analyzed data
- **Mar 19, 2013:** On City Council agenda; Council authorized purchase of new speed trailer
- **Mar 20-Apr 10, 2013:** Evaluated quotes for speed trailers
- **Apr 4-May 7, 2013:** Ridgeview Baseline Study
- **Apr 15, 2013:** Purchase Order issued for speed trailer
- **Apr 16-May 16, 2013:** 3rd MPD traffic study on Moonlight
- **Apr 17, 2013:** Purchased 2 additional MetroCount systems
- **Apr 24-May16, 2013:** MetroCount systems installed on Grant and Mason
- **May 15, 2013:** Delivery of speed trailer
- **May 16-June 1, 2013:** Analyzed Data
- **June 11, 2013:** Meeting with residents in Primary Affected Area
- **June 18, 2013:** On City Council agenda to review results and consider options

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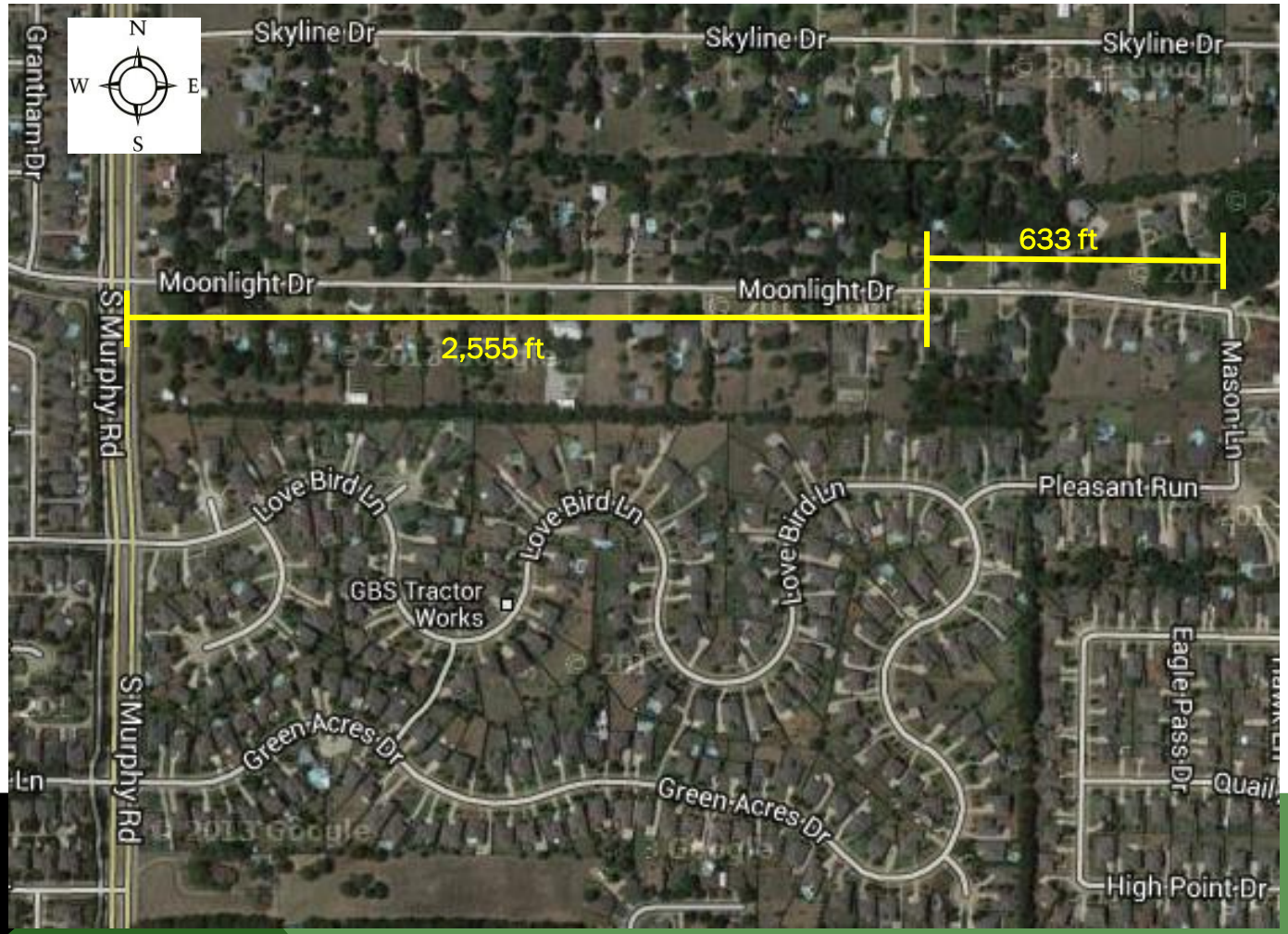
MOONLIGHT DRIVE



- From S. Murphy Rd to the center of the circle on Moonlight Dr = 2,555 ft
- From the center of the circle on Moonlight Dr to the end of Moonlight Dr = 633 ft
- **Total length of Moonlight Dr = 3,188 ft**

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RECAP OF 1ST TRAFFIC STUDY

Jan 3-Feb 4, 2013 (30 days)

- Approx. 27,564 vehicles utilized Moonlight
- 69.56% (19,179) were identified as having exceeded the posted speed limit
- 85th percentile: 32.2 mph
- Avg. Speed: 27.5
- Median Speed: 27.1
- Avg. Number of Vehicles per day utilizing Moonlight: 918
- Fastest Recorded Speed: 66 mph

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RECAP OF MUSTANG RIDGE BASELINE STUDY

Feb 23-Mar 9, 2013 (15 days)

- Approx. 12,226 vehicles traveled Mustang Ridge
- 50.02% (6,116) were identified as having exceeded the posted speed limit
- 85th percentile: 29.3 mph
- Avg. Speed: 23.8
- Median Speed: 24.8
- Avg. Number of Vehicles per day utilizing Mustang Ridge: 815
- Fastest Recorded Speed: 50 mph

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RECAP OF 2ND TRAFFIC STUDY

Feb 22-Mar 9, 2013 (16 days)

- Ran post Selective Traffic Enforcement Policy
- Approx. 12,707 vehicles utilized Moonlight
- 34% were identified as having exceeded the posted speed limit
- 85th percentile: 27.7 mph
- Avg. Speed: 23.7
- Median Speed: 23.3
- Avg. Number of Vehicles per day utilizing Moonlight: 794
- Fastest Recorded Speed: 71 mph
- Better overall compliance rate than Mustang Ridge baseline study

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RECAP OF RIDGEVIEW BASELINE STUDY

Apr 7-May 9, 2013 (31 days)

- Approx. 18,889 vehicles traveled Ridgeview
- 77.09% were identified as having exceeded the posted speed limit
- 85th percentile: 34.2 mph
- Avg. Speed: 28.8
- Median Speed: 28.4
- Avg. Number of Vehicles per day utilizing Mustang Ridge: 609
- Fastest Recorded Speed: 63 mph

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RECAP OF 3RD TRAFFIC STUDY

Apr 16-May 16, 2013 (30 days)

- Approx. 31,858 vehicles utilized Moonlight
- 31% were identified as having exceeded the posted speed limit
- 85th percentile: 27.7 mph
- Avg. Speed: 22.7
- Median Speed: 22.1
- Avg. Number of Vehicles per day utilizing Moonlight: 1,061
- Fastest Recorded Speed: 77 mph

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TRAFFIC STUDY ANALYSIS

	Date Range	Volume	# Days	Avg. Daily Count	85th %	Avg. Speed	Median Speed	Exceeded Posted Speed	Avg. Exceeding Speed	Max Speed
Study 1	1/3-2/4/13	27,546	30	918	32.2	27.5	27.1	69.56%	29.86	66
Study 2	2/22-3/9/13	12,707	16	794	27.7	23.7	23.3	34%	28.45	71
Study 3	4/16-5/16/13	31,858	30	1,061	27.7	22.7	22.1	31%	28.74	77
Study 3 (Modified)	4/24-5/16/13	23,100	23	1,004	27.7	22.9	22.6	32%	28.59	77
Mason	4/24-5/16/13	19,606	23	852	-	-	-	-	-	-
Grant	4/24-5/16/13	30,232	23	1,314	-	-	-	-	-	-
Mustang Ridge	2/23-3/9/13	12,226	15	815	29.3	23.8	24.8	50.02%	28.57	50
Ridgeview	4/7-5/9/13	18,889	31	609	34.2	28.8	28.4	77.09%	30.85	63
Average		22,021	24	921						

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PROPOSED TRAFFIC CONTROL MEASURES

- Gates
- Road Closure
- Speed Humps/Bumps
- Narrowings

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GATES

Retracting physical barrier placed across a street to close the street completely to through traffic, leaving access only to residents and emergency vehicles

PROS

- Decreases volume
- Allows Emergency/Public Safety access
- Decreases speed within vicinity of gate
- Decreases wear and tear on street within vicinity of gate

CONS

- Cost of installation of gates = approx. $12,000+ ROW acquisition, if necessary
- Moonlight Drive is a Public street in which a gate would limit access to the Public
- Diverses/Displaces traffic volume to other areas
- Turn-around space is needed on both sides of every gate
- 2-sided Opticom would need to be installed on all gates (approx. $2,500/gate)
- Chance of failure/malfunctions
- Who is responsible for maintenance?
- Risk of damage/Criminal Mischief
- Proposes legal issues & liabilities for the City
- Provides false sense of security
- Limits delivery/service vehicles (garbage, FedEx, school buses, etc.)

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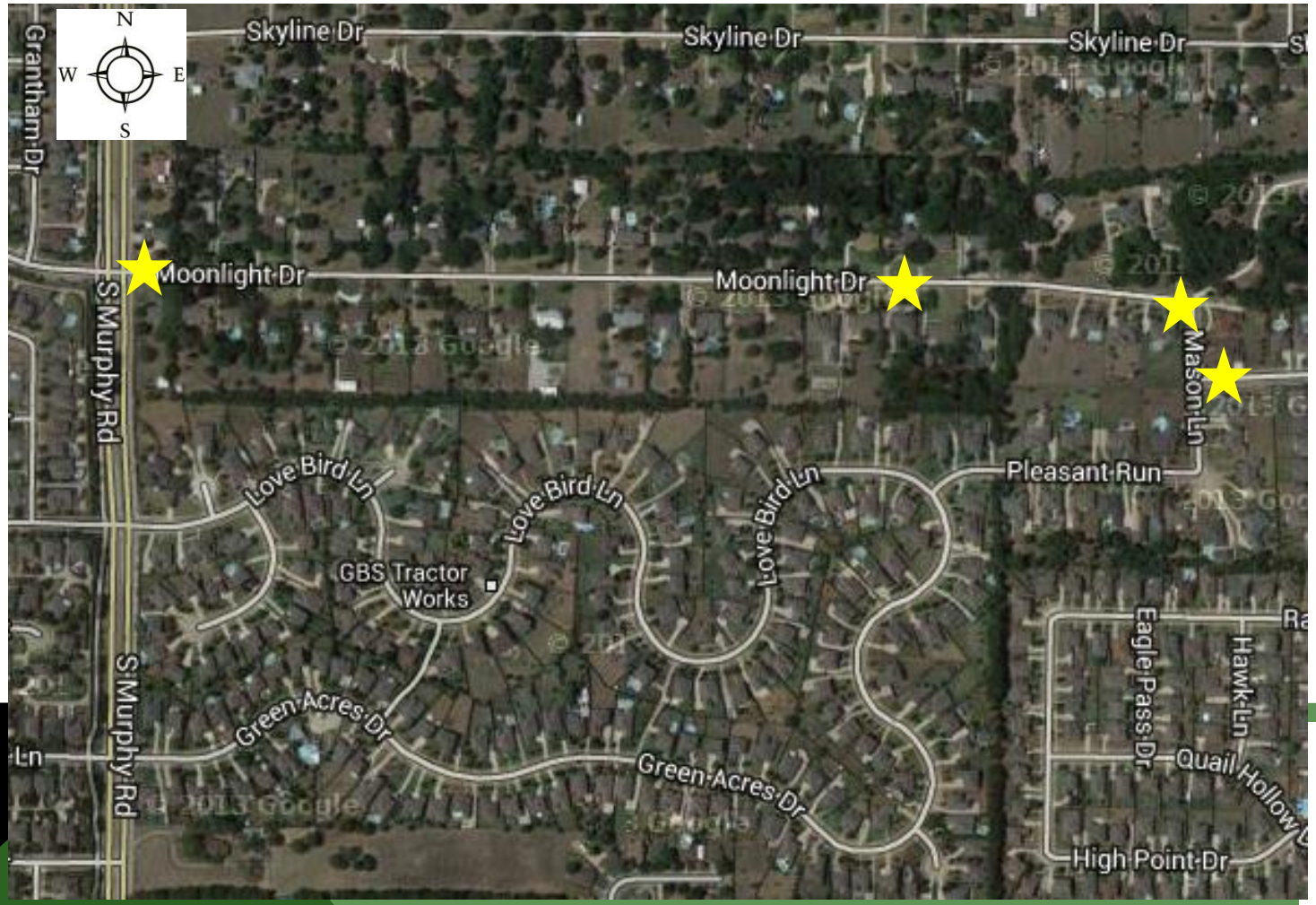
POSSIBLE LOCATION FOR ONE OR MORE GATES



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ROAD CLOSURE

Physical barrier placed across a street to close the street completely to through traffic, usually leaving only sidewalks or bicycle paths open; the most aggressive traffic control measure

PROS

- Decreases volume
- Decreases speed within vicinity of gate
- Decreases wear and tear on street within vicinity of gate

CONS

- Cost of road closure = approx. $12,000+ ROW acquisition, if necessary
- Moonlight Drive is a Public street in which a road closure would limit access to the Public
- Against City Ordinance (Sec. 70-71)
- Reduces Emergency/Public Safety access
- Unable to properly evacuate residents in emergency
- Diverses/Displaces traffic volume to other areas
- Limits delivery/service vehicles (garbage, FedEx, school buses, etc.)
- Proposes legal issues & liabilities for the City
- Turn-around space is needed on both sides of closure
- Increase in City maintenance & upkeep

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CITY ORDINANCE SEC. 70-71

Paragraph (p) – Maximum Length of Cul-de-sac. A cul-de-sac street shall not be longer than 600 feet, and at the closed end shall have a turnaround bulb with an outside pavement diameter of at least 80 feet and a right-of-way diameter of at least 100 feet. The length of a cul-de-sac shall be measured from the centerline of the intersecting street to the centerline of the cul-de-sac bulb.

Paragraph (r) – Dead-end Streets. Except in unusual cases, no dead-end streets will be approved unless such dead-end streets are provided to connect with future streets on adjacent land.

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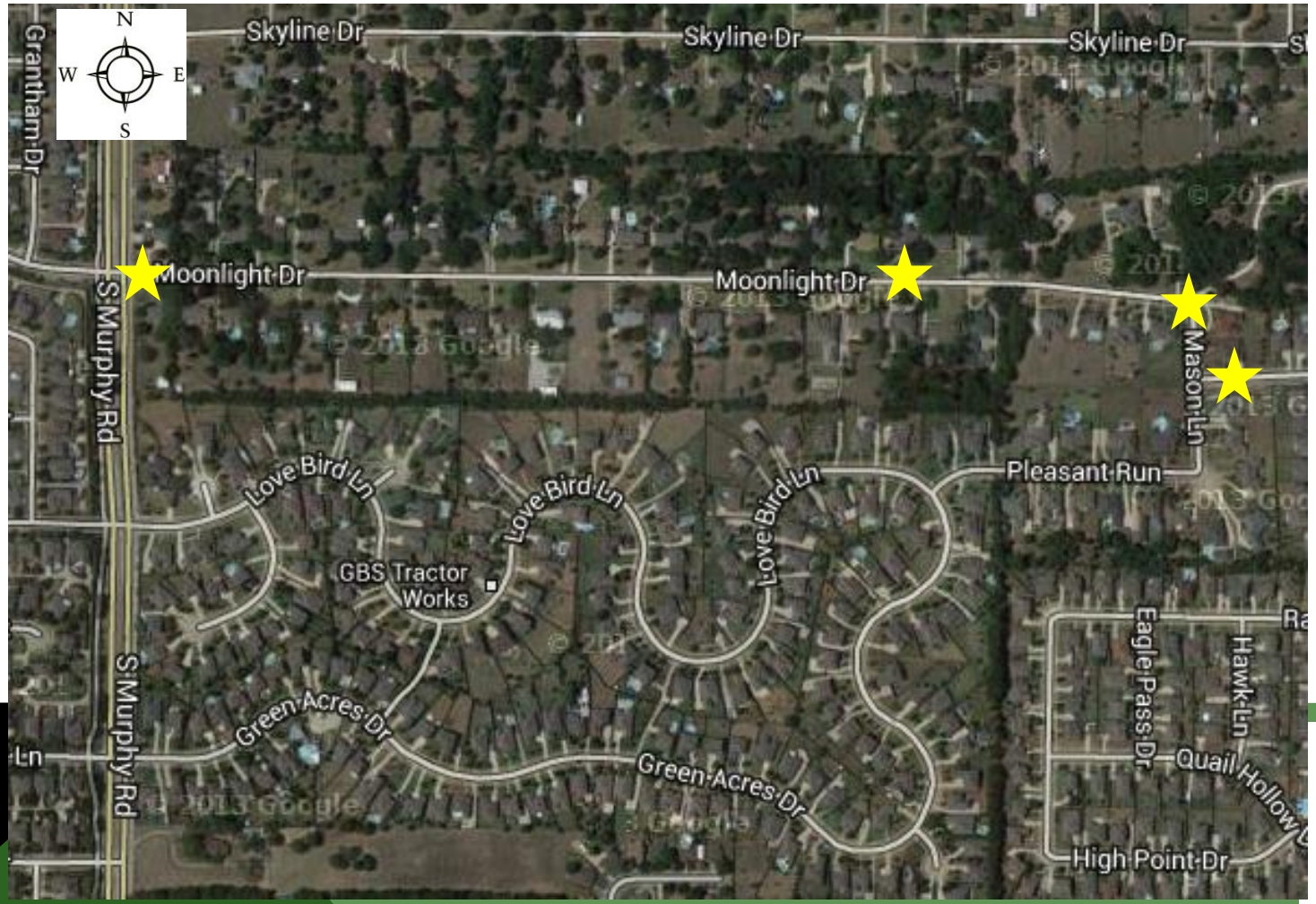
POSSIBLE LOCATIONS FOR ROAD CLOSURE



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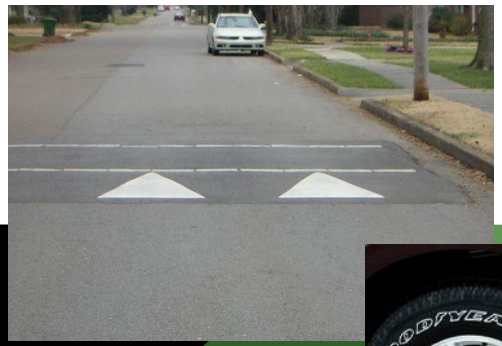
SPEED HUMPS/BUMPS

Rounded device placed across the road to slow traffic; often installed in a series of several humps to prevent speeding before and after the hump

PROS

- Lower construction & maintenance cost of traffic control measure
- Easy installation
- Decreases both volume & speed
- Self-enforcing
- Allows Emergency/Public Safety access



CONS

- Cost of speed humps = approx. $2,000/speed hump * 8 speed humps = $16,000/road
- Slows down Emergency response time by 5-9 seconds/hump
- Causes an increase in trash & negative public comments
- Increases discomfort for patients in ambulance or vehicle occupants suffering from certain physical ailments
- Liability for the City – potential vehicle damage
- Potential damage to public safety vehicles (Fire truck suspension system) & school buses
- On-street parking may be eliminated in areas adjacent to a hump
- Diverses/Displaces traffic volume to other areas

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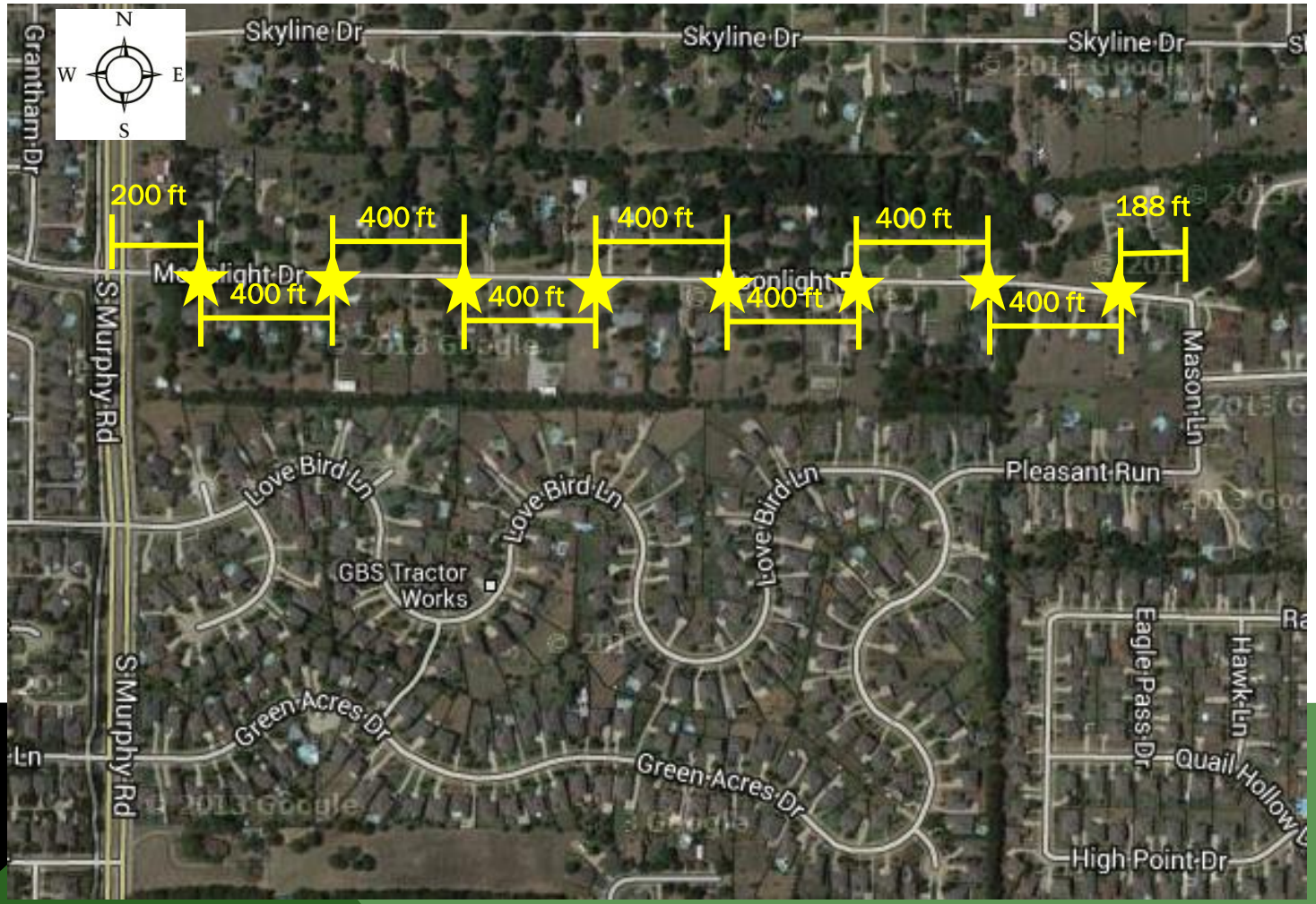
PROPOSED LOCATION FOR SPEED HUMPS/BUMPS



- With 8 speed humps, this would add anywhere from 0:40 to 1:12 minutes to emergency response time.

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NARROWINGS

Medians placed down the center of the street, or curb extensions that widen the sidewalk or planting strip, to narrow the lanes to slow traffic

PROS

- Decreases both volume and speed
- Allows Emergency/Public Safety access

CONS

- Cost of narrowings = approx. $8,000-$12,000/narrowing+ ROW acquisition, if necessary
- Increase in City maintenance & upkeep
- On-street parking may be eliminated in areas adjacent to a narrowing
- Proposes legal issues & liabilities for the City
- Diverses/Displaces traffic volume to other areas
- Increase for potential accidents
- Possible Traffic Engineer needed

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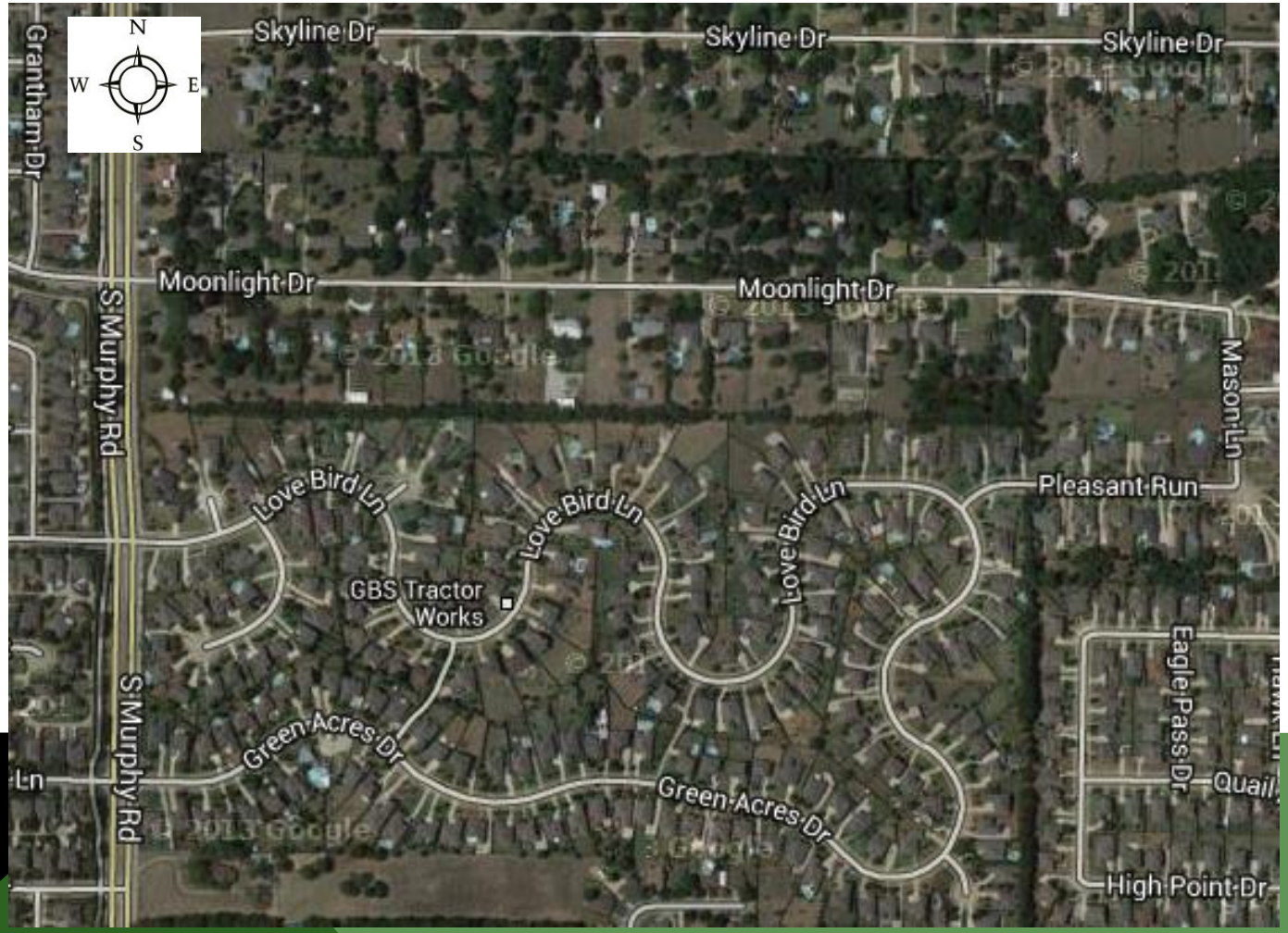
POSSIBLE LOCATIONS FOR NARROWINGS - TBD



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STAFF RECOMMENDATION

Staff recommends the following control measures for Moonlight Drive:

- Pole-Mounted Radar Speed Limit Signs
  - Approximately $2,500/sign
- 8 speed humps located approximately 400' apart
  - Approximately $2,000/hump
  - Total cost: $16,000

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SOURCES INCLUDE:

- A Study on Speed Humps: http://www.ctre.iastate.edu/research/roadhump/
- Speed Humps Effect on Emergency Response Times: http://www.usfa.fema.gov/pdf/efop/efo42774.pdf
- City of Inglewood Traffic Calming Measures: http://www.cityofinglewood.org/depts/pw/Trafficmeasures/TrafficCalmingMeasures.pdf
- City of Richardson Traffic Calming Policy: http://www.cor.net/modules/showdocument.aspx?documentid=855
- City of North Richland Hills Traffic Calming Policy: http://www.nrhtx.com/DocumentCenter/Home/View/164
- San Antonio Traffic Calming: http://www.sanantonio.gov/publicworks/trafficcalming.aspx
- City of Murphy Thoroughfare Plan
- City of Murphy Traffic Calming Policy: http://www.murphytx.org/documentcenter/view/655

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