



May 29, 2013

Mr. Marshall Bartlett  
Maine Medical Center  
22 Bramhall Street  
Portland, Maine 04102

Subject: Collision Diagrams Management Program  
Bramhall Campus

Dear Marshall:

Our office recently completed a traffic and parking assessment for planned Bean 2 expansion. That assessment determined that there were five high crash locations in the vicinity of the site between the years of 2009 and 2011. Our office has obtained the collision reports from the MaineDOT for the period from 2009 through 2011 for each of these locations which are included in this letter and summarized below:

#### **St John Street between the intersection of A and C Streets**

Eleven collisions occurred along this section of roadway. Two collisions involved pedestrians crossing St John Street and three involved parked cars with the remainder random in nature. The City of Portland is in the process of completing a project in this area which includes pedestrian improvements at the intersection of "A" Street and St John Street as well as islands to clarify lane use. These improvements may address some of these collisions.

#### **Congress Street between Forest Street and Weymouth Street**

Of the ten collisions which occurred along this section of road, three involved parked vehicles on the easterly side of Congress Street. Two collisions involved vehicles striking parked cars, one involved a vehicle whose operator was under the influence striking a tree, one involved a bicyclist being struck by a driver turning left into the parking garage and four were rear end collisions, with the remaining being random. There does not appear to be a correctable pattern to these collisions.

#### **Congress Street between Weymouth and Ellsworth Street**

Ten collisions occurred along this section of roadway. One collision occurred due to a vehicle traveling the wrong way, one due to intoxication, one due to a driver falling asleep, one involved a pedestrian attempting a mid block crossing, and three involved

Mr. Marshall Bartlett  
May 29, 2013  
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parked cars long the northerly side of Congress Street along the curve with the remainder random in nature. The only possible pattern is the three collisions with vehicles parked on the outside of the curve. We recommend this segment be monitored and that the City consider eliminating this parking if this pattern continues.

### **Intersection of Congress Street with Gillman Street**

Of the ten collisions which occurred at this intersection, five involved traffic exiting the north leg of Gilman Street opposite the approach serving the MMC garage. One collision involved a right turning vehicle exiting the southerly leg of Gilman. One collision involved a pedestrian and the remaining were rear end collisions on Congress Street. There does not appear to be a correctable pattern at this intersection. The traffic volume exiting Gilman is likely not high enough to warrant a traffic light and it would not be desirable given the existing traffic light in close proximity at Valley Street. The Manual on Uniform Traffic Control Devices requires a minimum of 5 crashes in a single year correctable by a traffic signal before consideration can be given to the installation of a traffic light if a volume warrant is not met.

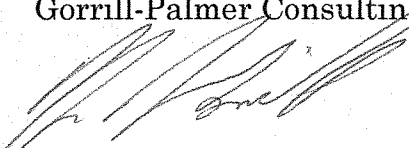
### **Intersection of Congress Street and Valley Street**

There were a total of twenty three collisions at this intersection over the three year period. Six of the collisions were rear end with the large majority of the remaining collisions angular between vehicles exiting Valley Street and westbound Congress Street. The traffic signals lack sunshields which can improve visibility particularly westbound on Congress Street when the sun is setting. We recommend that the City install sunshields on the traffic signals for at this intersection.

If you have any questions please contact our office.

Sincerely,

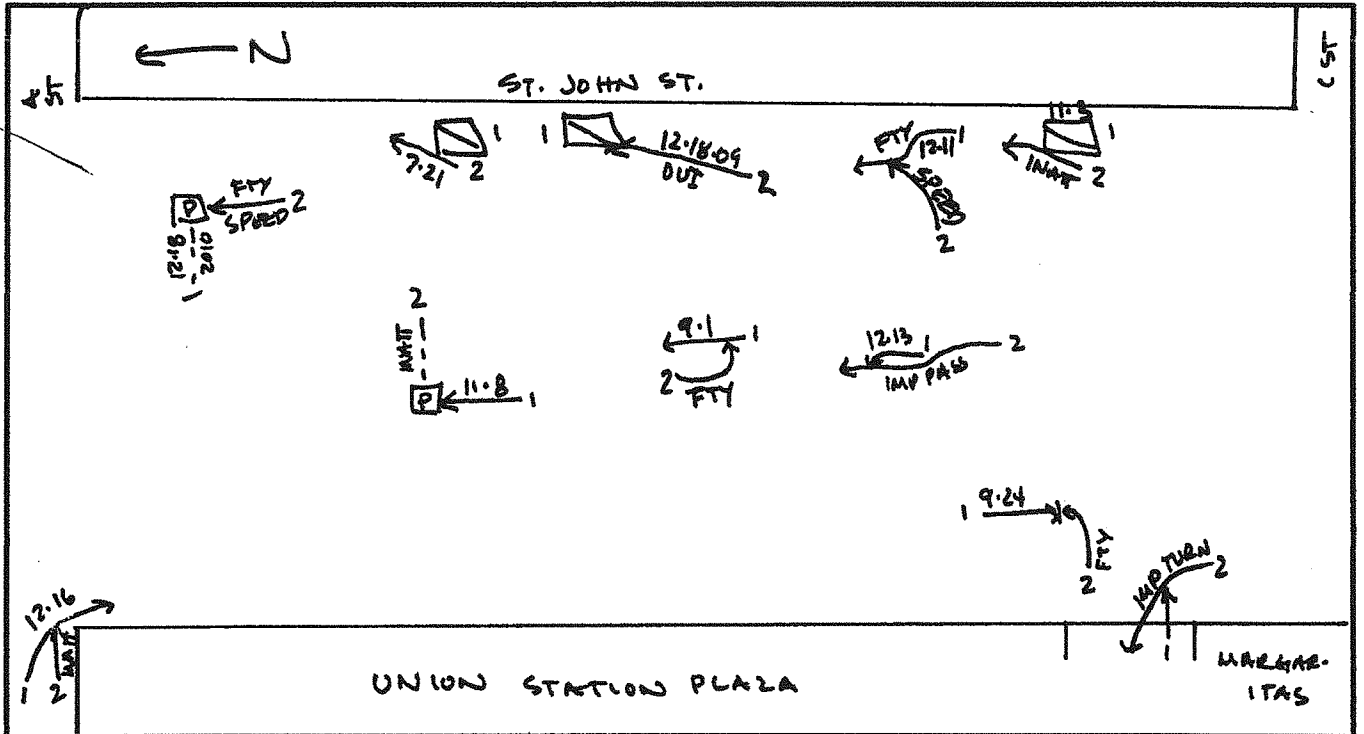
Gorrill-Palmer Consulting Engineers, Inc.



Thomas L. Gorrill, P.E., PTOE  
President

# COLLISION DIAGRAM

LOCATION ST JOHN ST (btwn A ST & C ST) SHEET 1 OF 2  
 TOWN PORTLAND NODE NO(S) 16763-16764  
 YEARS REVIEWED 2009-2011 DATE PREPARED 5/28/13



CRITICAL RATE FACTOR \_\_\_\_\_ EQUIV. PROP. DAMAGE ACC/YEAR 11 ACC/MEV \_\_\_\_\_

- LIGHT**  
 1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)  
 4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)  
 7. OTHER
- ROAD SURFACE**  
 1. DRY 2. WET 3. SNOW/SLUSH-SANDED  
 4. ICE/PACKED SNOW-SANDED 5. MUDDY 8. DEBRIS  
 7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED  
 10. OTHER
- APPARENT CONTRIBUTING FACTORS - HUMAN**  
 1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED  
 4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE  
 6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING  
 8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN  
 11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC  
 14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE  
 16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS  
 19. VISION OBSCURED-SUN/HEADLIGHTS  
 20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR  
 31. HIT AND RUN 51. UNKNOWN
- VEHICULAR**  
 41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS  
 44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT  
 51. UNKNOWN

**SYMBOLS**

ANGLE → PEDESTRIAN → [P] FATAL ACCIDENT ●  
 BACKING →<<< REAR END →>>>  
 FIXED OBJECT → [ ] SIDE SWIPE →>>> VEHICLE (MOVING) →>>>  
 HEAD ON →<<< TURNING MOVE →>>> BICYCLE --- [B]  
 OVERTURN →>>> CHANGE LANE →>>> ANIMAL --- [A]  
 PARKED VEHICLE [ ] OUT OF CONTROL →>>> SLED --- [S]

**WEATHER**  
 C = CLEAR F = FOG R = RAIN  
 SL = SLEET S = SNOW CL = CLOUDY  
 XW = CROSS WINDS

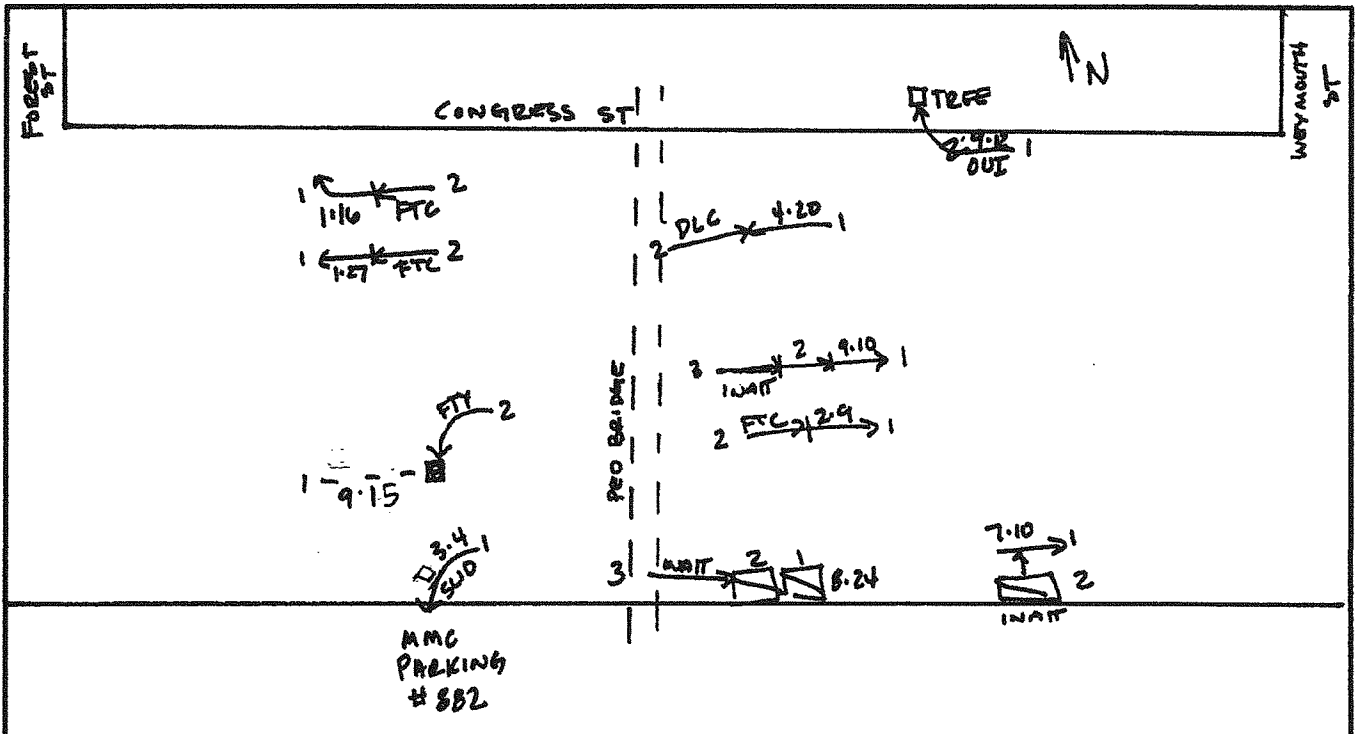
**INJURIES**  
 K = FATAL B = NON-INCAPACITATING  
 A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
09-2757	9.24.09	14:15			1		2	2	VI = MOTORCYCLE	
09-3503	12.11.09	13:40					2	VI = 2 V2 = 3	VI WAS PARKED PULLING OUT	
09-3556	12.16.09	9:30					2	14		
09-3581	12.18.09	18:16		1			4	14		
10-1871	07.21.10	11:55					2	14		
10-2275	09.01.10	12:40					2	2		
10-3287	12.13.10	18:50					4	7		
10-3346	12.18.10	19:33		1			4	2, 3		



# COLLISION DIAGRAM

LOCATION CONGRESS ST (between Forest St & Weymouth St) SHEET 1 OF 2  
 TOWN PORTLAND NODE NO(S) 16827-16828  
 YEARS REVIEWED 2009-2011 DATE PREPARED 5.28.2013



CRITICAL RATE FACTOR \_\_\_\_\_ EQUIV. PROP. DAMAGE ACC/YEAR 10 ACC/MEV \_\_\_\_\_

- LIGHT**
- 1. DAWN (MORNING)
  - 2. DAYLIGHT
  - 3. DUSK (EVENING)
  - 4. DARK (ST. LIGHTS ON)
  - 5. DARK (NO ST. LIGHTS)
  - 6. DARK (ST. LIGHTS OFF)
  - 7. OTHER
- ROAD SURFACE**
- 1. DRY
  - 2. WET
  - 3. SNOW/SLUSH-SANDED
  - 4. ICE/PACKED SNOW-SANDED
  - 5. MUDDY
  - 6. DEBRIS
  - 7. OILY
  - 8. SNOW/SLUSH-NOT SANDED
  - 9. ICE-PKD. SNOW-NOT SANDED
  - 10. OTHER
- APPARENT CONTRIBUTING FACTORS - HUMAN**
- 1. NO IMPROPER ACTION
  - 2. FAIL TO YLD. RIGHT OF WAY
  - 3. ILLEGAL UNSAFE SPEED
  - 4. FOLLOW TOO CLOSE
  - 5. DISREGARD TRAFFIC CONTROL DEVICE
  - 6. DRIVING LEFT OF CENTER-NO PASSING
  - 7. IMPROPER PASS-OVERTAKING
  - 8. IMP. UNSAFE LANE CHANGE
  - 9. IMP. PARKING START/STOP
  - 10. IMPROPER TURN
  - 11. UNSAFE BACKING
  - 12. NO SIGNAL OR IMP. SIGNAL
  - 13. IMPENDING TRAFFIC
  - 14. DRIVER INATTENTION-DISTRACTION
  - 15. DRIVER INEXPERIENCE
  - 16. PEDEST. VIOLATION ERROR
  - 17. PHYSICAL IMPAIRMENT
  - 18. VISION OBSCURED-WINDSHIELD GLASS
  - 19. VISION OBSCURED-SUN/HEADLIGHTS
  - 20. OTHER VISION OBSCUREMENT
  - 30. OTHER HUMAN VIOLATION FACTOR
  - 31. HIT AND RUN
  - 51. UNKNOWN
- VEHICULAR**
- 41. DEFECTIVE BRAKES
  - 42. DEFECTIVE TIRE/FAILURE
  - 43. DEFECTIVE LIGHTS
  - 44. DEFECTIVE SUSPENSION OR FACTOR
  - 45. DEFECTIVE STEERING
  - 50. OTHER VEHICLE DEFECT
  - 51. UNKNOWN

**SYMBOLS**

ANGLE: ANGLE

BACKING: BACKING

FIXED OBJECT: FIXED OBJECT

HEAD ON: HEAD ON

OVERTURN: OVERTURN

PARKED VEHICLE: PARKED VEHICLE

PEDESTRIAN: PEDESTRIAN

REAR END: REAR END

SIDE SWIPE: SIDE SWIPE

TURNING MOVE: TURNING MOVE

CHANGE LANE: CHANGE LANE

OUT OF CONTROL: OUT OF CONTROL

FATAL ACCIDENT: FATAL ACCIDENT

VEHICLE (MOVING): VEHICLE (MOVING)

BICYCLE: BICYCLE

ANIMAL: ANIMAL

SLED: SLED

**WEATHER**

C = CLEAR  
 F = FOG  
 S = SNOW  
 R = RAIN  
 CL = CLOUDY  
 XW = CROSS WINDS

**INJURIES**

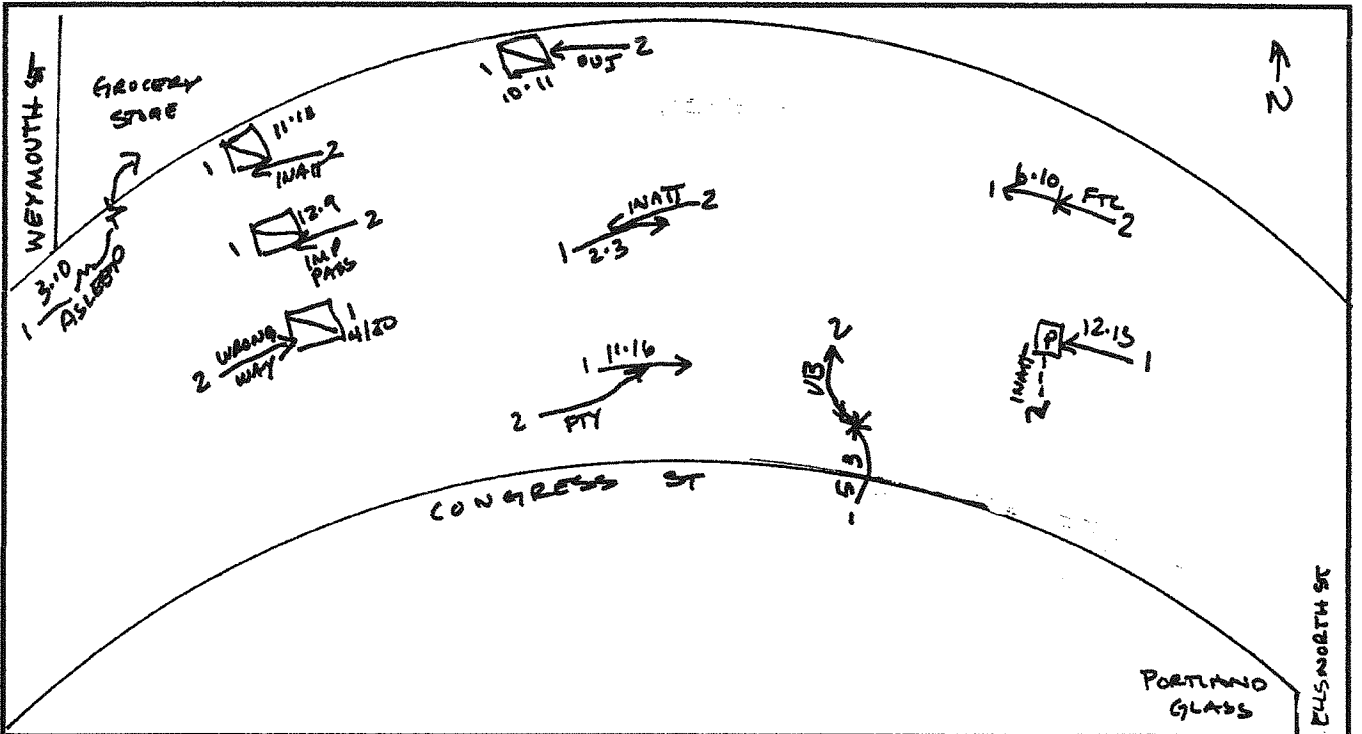
K = FATAL  
 A = INCAPACITATING  
 B = NON-INCAPACITATING  
 C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
09-0719	01.16.09	12:00					2	1	4	WALL #882
09-0359	01.27.09	12:46					2	1	4	
09-0875	03.04.09	9:33					2	2	51	HIT PARKING ST. WALL STAGNANT FEEL FB. VAN ONTO VI
09-2026	07.10.09	9:25					2	1	30	WALL #887
09-2631	09.10.09	8:43				2	1	14		
09-2649	09.12.09	18:47				3	2	0UI		
09-2669	09.15.09	7:45			1	2	2	2		
10-2196	08.24.10	12:25	-	1	-	2	1	45		STEERING FEB 20



# COLLISION DIAGRAM

LOCATION CONGRESS ST (btwn WEYMOUTH ST & ELLSWORTH ST) SHEET 1 OF 2  
 TOWN PORTLAND NODE NO(S) 16826-16827  
 YEARS REVIEWED 2009-2011 DATE PREPARED 5/28/13



CRITICAL RATE FACTOR \_\_\_\_\_ EQUIV. PROP. DAMAGE ACC/YEAR 0 ACC/MEV \_\_\_\_\_

- LIGHT**  
 1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)  
 4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)  
 7. OTHER
- ROAD SURFACE**  
 1. DRY 2. WET 3. SNOW/SLUSH-SANDED  
 4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS  
 7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED  
 10. OTHER
- APPARENT CONTRIBUTING FACTORS - HUMAN**  
 1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED  
 4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE  
 6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING  
 8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN  
 11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC  
 14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE  
 16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS  
 19. VISION OBSCURED-SUN/HEADLIGHTS  
 20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR  
 31. HIT AND RUN 51. UNKNOWN
- VEHICULAR**  
 41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS  
 44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT  
 51. UNKNOWN

**SYMBOLS**

ANGLE	→	PEDESTRIAN	→ [P]	FATAL ACCIDENT	●
BACKING	←←→	REAR END	→ →	VEHICLE (MOVING)	→
FIXED OBJECT	→	SIDE SWIPE	→ →	BICYCLE	--- [B]
HEAD ON	→ ←	TURNING MOVE	→ ↗	ANIMAL	--- [A]
OVERTURN	→ ↻	CHANGE LANE	→ ↔	SLID	--- [S]
PARKED VEHICLE	□	OUT OF CONTROL	→ ~		

**WEATHER**  
 C = CLEAR F = FOG R = RAIN  
 SL = SLEET S = SNOW CL = CLOUDY  
 XW = CROSS WINDS

**INJURIES**  
 K = FATAL B = NON-INCAPACITATING  
 A = INCAPACITATING C = POSSIBLE INJURY

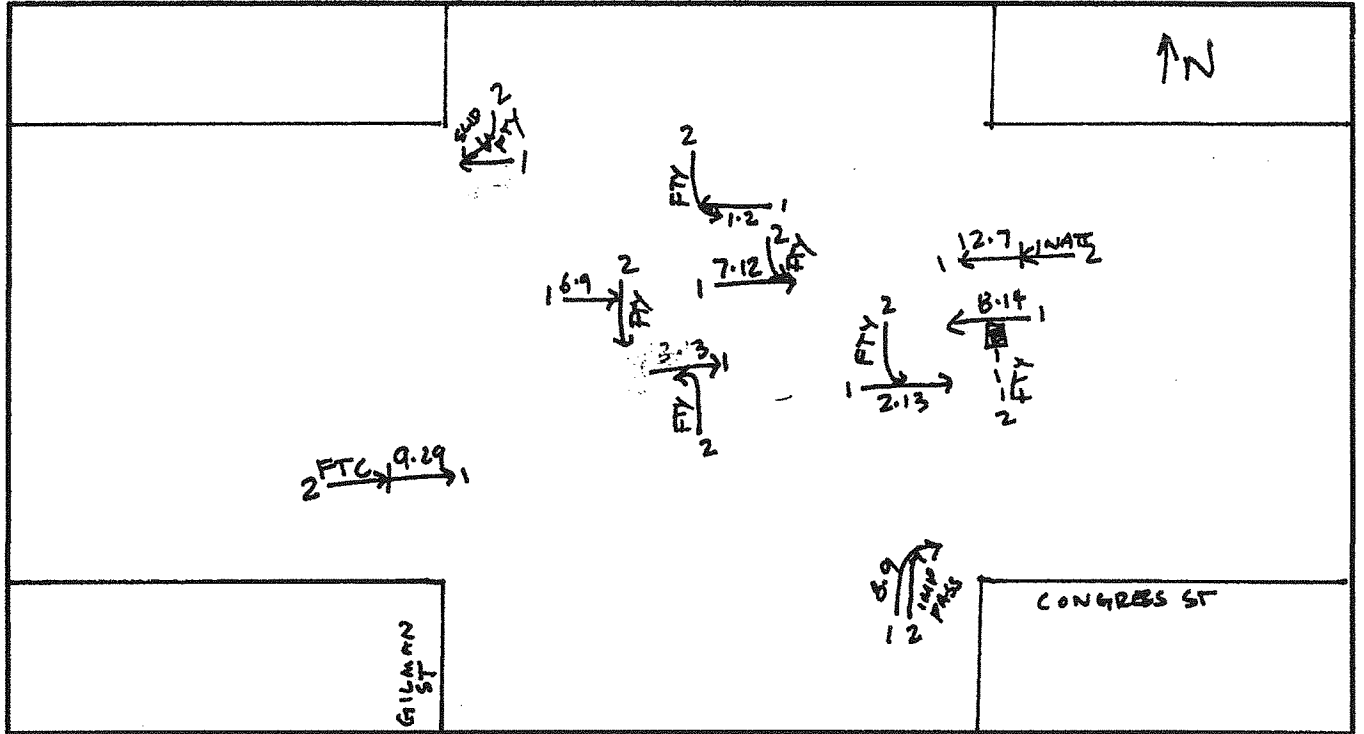
REPORT NO.	DATE	TIME	INJURIES			LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B				
09-0498	02-03-09	13:30				2	2	14	
09-2927	10-11-09	1:17				4	1	14	OOI
09-3234	11-16-09	6:45				1	1	2	
09-3275	11-18-09	19:00				6	1	14	
09-3463	12-09-09	1:00				6	1	7	
10-0640	03-10-10	6:13				1	1	30	ASLEEP
10-1049	05-03-10	15:54				2	1	11	
11-1178	04-20-11	17:33				2	1	6	





# COLLISION DIAGRAM

LOCATION CONGRESS ST & GILMAN ST SHEET 1 OF 2  
 TOWN PORTLAND NODE NO(S) 18571  
 YEARS REVIEWED 2009-2011 DATE PREPARED 6/28/13



CRITICAL RATE FACTOR \_\_\_\_\_ EQUIV. PROP. DAMAGE ACC/YEAR 10 ACC/MEV \_\_\_\_\_

- LIGHT**  
 1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)  
 4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)  
 7. OTHER
- ROAD SURFACE**  
 1. DRY 2. WET 3. SNOW/SLUSH-SANDED  
 4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS  
 7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED  
 10. OTHER
- APPARENT CONTRIBUTING FACTORS - HUMAN**  
 1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED  
 4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE  
 6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING  
 8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN  
 11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC  
 14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE  
 16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS  
 19. VISION OBSCURED-SUN/HEADLIGHTS  
 20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR  
 31. HIT AND RUN 51. UNKNOWN
- VEHICULAR**  
 41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS  
 44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT  
 51. UNKNOWN

**SYMBOLS**

ANGLE: [Symbol] PEDESTRIAN: [Symbol] FATAL ACCIDENT: [Symbol]

BACKING: [Symbol] REAR END: [Symbol]

FIXED OBJECT: [Symbol] SIDE SWIPE: [Symbol] VEHICLE (MOVING): [Symbol]

HEAD ON: [Symbol] TURNING MOVE: [Symbol] BICYCLE: [Symbol]

OVERTURN: [Symbol] CHANGE LANE: [Symbol] ANIMAL: [Symbol]

PARKED VEHICLE: [Symbol] OUT OF CONTROL: [Symbol] SLED: [Symbol]

**WEATHER**  
 C = CLEAR F = FOG R = RAIN  
 SL = SLEET S = SNOW CL = CLOUDY  
 XW = CROSS WINDS

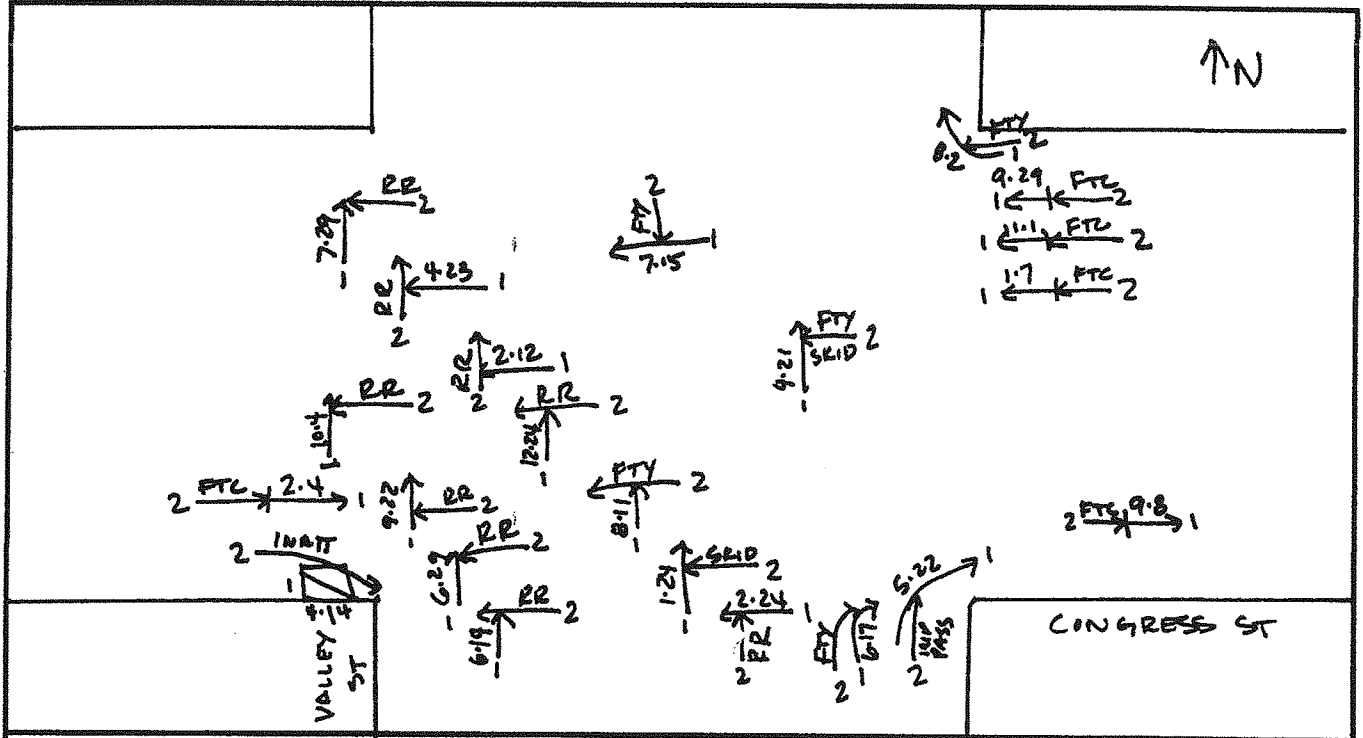
**INJURIES**  
 K = FATAL B = NON-INCAPACITATING  
 A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES					LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C					
09-7	01-02-09	9:15						2	1	2	
09-0129	01-12-09	18:06				1		4	9	2	
09-0644	02-13-09	22:05						4	1	2	
09-0848	03-03-09	7:05						2	2	2	
09-1412	06-09-09	14:04						2	2	2	
09-2049	07-12-09	14:24		1				2	1	2	V2 = MOTORCYCLE
09-3435	12-07-09	8:24						2	1	14	
10-2036	08-09-10	16:22						2	1	7	



# COLLISION DIAGRAM

LOCATION CONGRESS ST & VALLEY ST SHEET 1 OF 2  
 TOWN PORTLAND NODE NO(S) 16752  
 YEARS REVIEWED 2009-2011 DATE PREPARED 5/28/13



CRITICAL RATE FACTOR \_\_\_\_\_ EQUIV. PROP. DAMAGE ACC/YEAR 22 ACC/MEV \_\_\_\_\_

- LIGHT**  
 1. DAWN (MORNING) 2. DAYLIGHT 3. DUSK (EVENING)  
 4. DARK (ST. LIGHTS ON) 5. DARK (NO ST. LIGHTS) 6. DARK (ST. LIGHTS OFF)  
 7. OTHER
- ROAD SURFACE**  
 1. DRY 2. WET 3. SNOW/SLUSH-SANDED  
 4. ICE/PACKED SNOW-SANDED 5. MUDDY 6. DEBRIS  
 7. OILY 8. SNOW/SLUSH-NOT SANDED 9. ICE-PKD. SNOW-NOT SANDED  
 10. OTHER
- APPARENT CONTRIBUTING FACTORS - HUMAN**  
 1. NO IMPROPER ACTION 2. FAIL TO YLD. RIGHT OF WAY 3. ILLEGAL UNSAFE SPEED  
 4. FOLLOW TOO CLOSE 5. DISREGARD TRAFFIC CONTROL DEVICE  
 6. DRIVING LEFT OF CENTER-NO PASSING 7. IMPROPER PASS-OVERTAKING  
 8. IMP. UNSAFE LANE CHANGE 9. IMP. PARKING START/STOP 10. IMPROPER TURN  
 11. UNSAFE BACKING 12. NO SIGNAL OR IMP. SIGNAL 13. IMPEDING TRAFFIC  
 14. DRIVER INATTENTION-DISTRACTION 15. DRIVER INEXPERIENCE  
 16. PEDEST. VIOLATION ERROR 17. PHYSICAL IMPAIRMENT 18. VISION OBSCURED-WINDSHIELD GLASS  
 19. VISION OBSCURED-SUN/HEADLIGHTS  
 20. OTHER VISION OBSCUREMENT 30. OTHER HUMAN VIOLATION FACTOR  
 31. HIT AND RUN 51. UNKNOWN
- VEHICULAR**  
 41. DEFECTIVE BRAKES 42. DEFECTIVE TIRE/FAILURE 43. DEFECTIVE LIGHTS  
 44. DEFECTIVE SUSPENSION OR FACTOR 45. DEFECTIVE STEERING 50. OTHER VEHICLE DEFECT  
 51. UNKNOWN

**SYMBOLS**

ANGLE: [Symbol] → PEDESTRIAN: [Symbol] → FATAL ACCIDENT: [Symbol]

BACKING: [Symbol] → REAR END: [Symbol] → VEHICLE (MOVING): [Symbol]

FIXED OBJECT: [Symbol] → SIDE SWIPE: [Symbol] → BICYCLE: [Symbol]

HEAD ON: [Symbol] → TURNING MOVE: [Symbol] → ANIMAL: [Symbol]

OVERTURN: [Symbol] → CHANGE LANE: [Symbol] → SLED: [Symbol]

PARKED VEHICLE: [Symbol] → OUT OF CONTROL: [Symbol]

**WEATHER**  
 C = CLEAR F = FOG R = RAIN  
 SL = SLEET S = SNOW CL = CLOUDY  
 XW = CROSS WINDS

**INJURIES**  
 K = FATAL B = NON-INCAPACITATING  
 A = INCAPACITATING C = POSSIBLE INJURY

REPORT NO.	DATE	TIME	INJURIES				LIGHT	ROAD SURFACE	ACF	OTHER
			K	A	B	C				
09.1335	04.21.09	10:49	—	—	—	—	2	2	2	
09.1588	05.22.09	12:43	—	—	—	—	3	1	7	
09.2078	07.15.09	13:15	—	—	—	—	2	1	2	
09.2332	08.11.09	15:34	—	—	—	—	2	1	2	
09.2611	09.08.09	14:20	—	—	—	—	2	1	4	
09.2803	09.29.09	23:05	—	—	—	—	4	2	4	
09.3115	11.01.09	0:25	—	—	—	—	4	2	VIOLATION 02.4	
09.3634	12.24.09	14:48	—	1	—	—	2	1	5	

