

# Traffic Volume in Minnesota Interstate

**MINNESOTA GO**

Planning Minnesota's  
Transportation Future

# Goal of the project

**Make important infrastructure decisions.**

**These decisions will ensure that any construction in the future won't cause problems for drivers.**



# Metric Selection



## Date time

- Traffic volume Patterns throughout month, day, and hour.



## Weather

- Impact of weather conditions on Traffic volume.



## Holidays

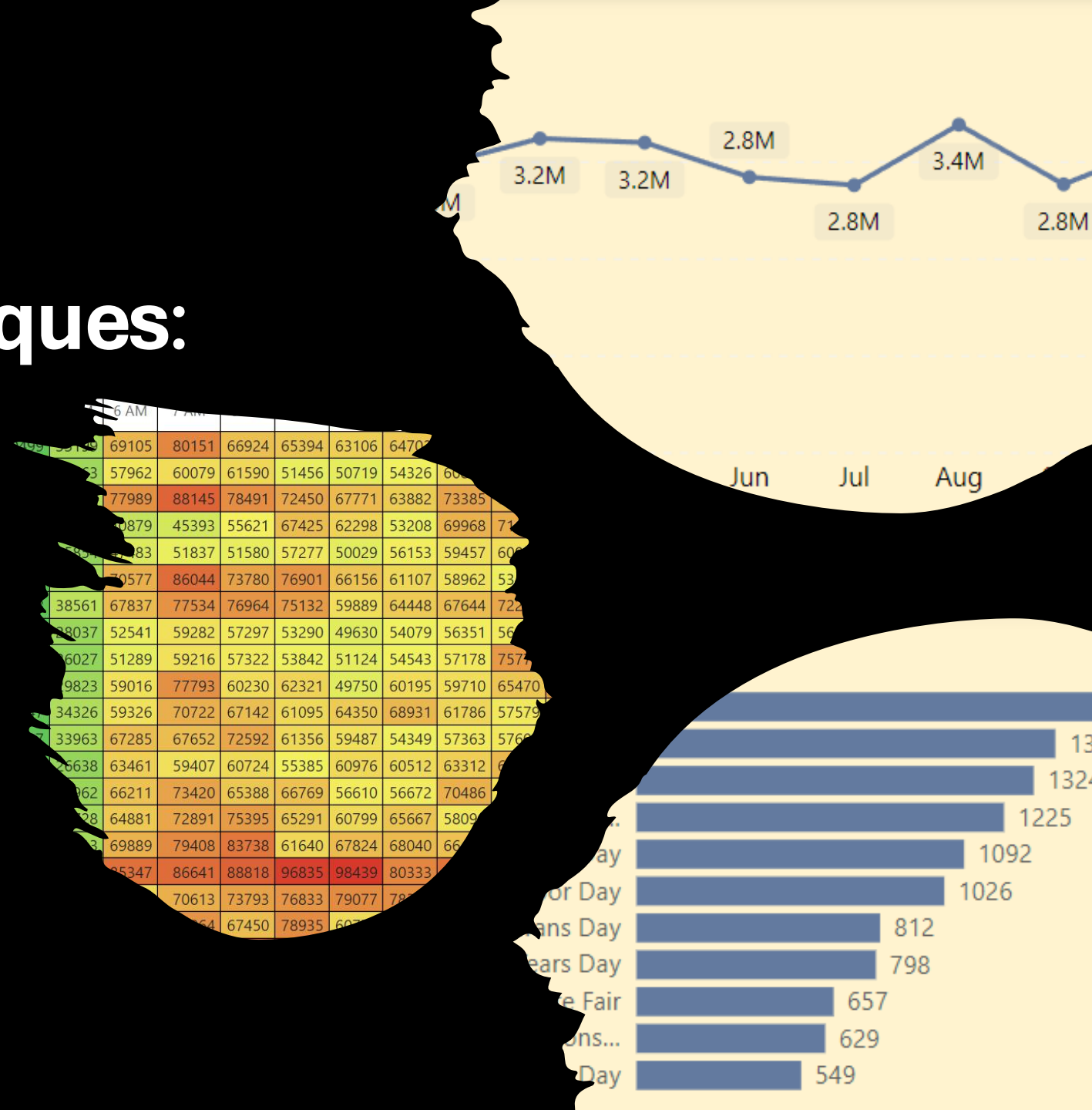
- Traffic volume on different holidays and special events.

# Visualization Techniques:

Line charts to illustrate trends in traffic volume over time.

Heatmaps to visualize traffic patterns throughout the day and hour.

Bar charts to compare traffic volume across different weather conditions and holidays.



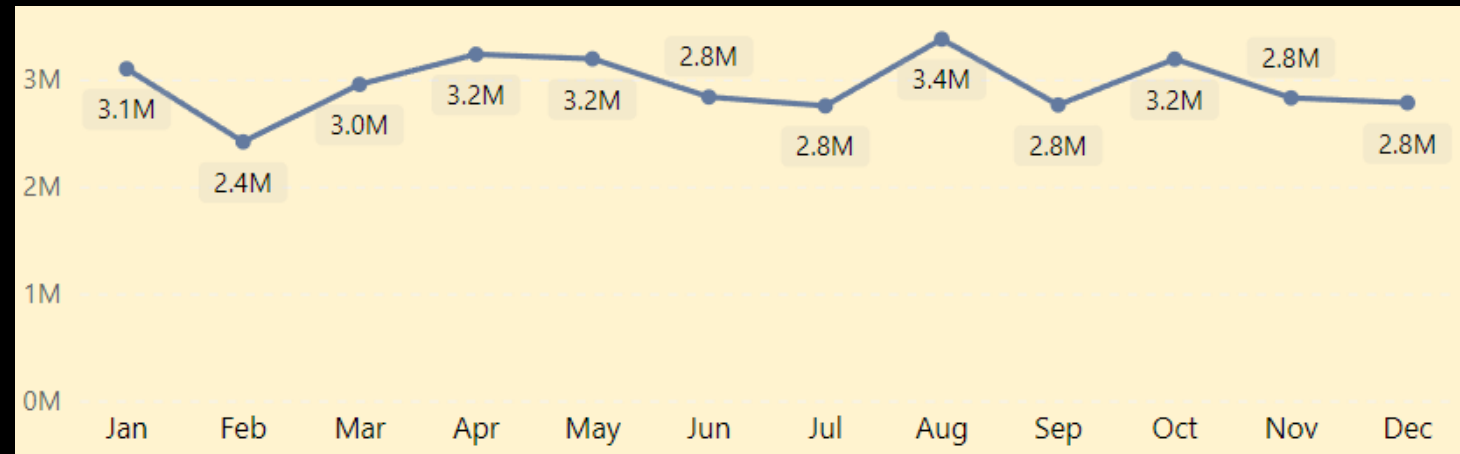
# Monthly Trend in 2017

---

**February - Lowest Month,  
best possible month for construction  
changes**

---

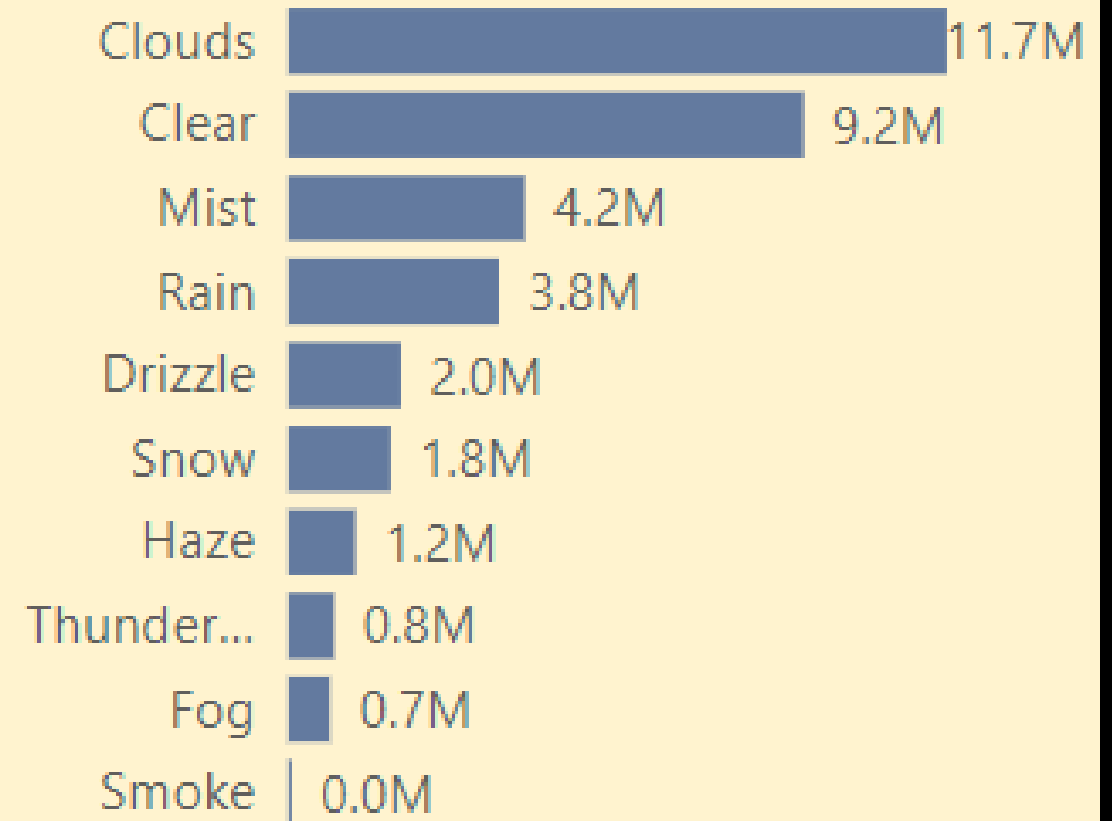
**August - Highest volume, possible end  
of summer seasonal traffic**



# Impact of Weather Conditions (2017)

**Clear/cloudy** conditions result in the highest traffic volume.

**Precipitation** has a significant impact on traffic volume, though a surprising number of motorists continue to drive in rain



## Busiest Holiday (2017)

---

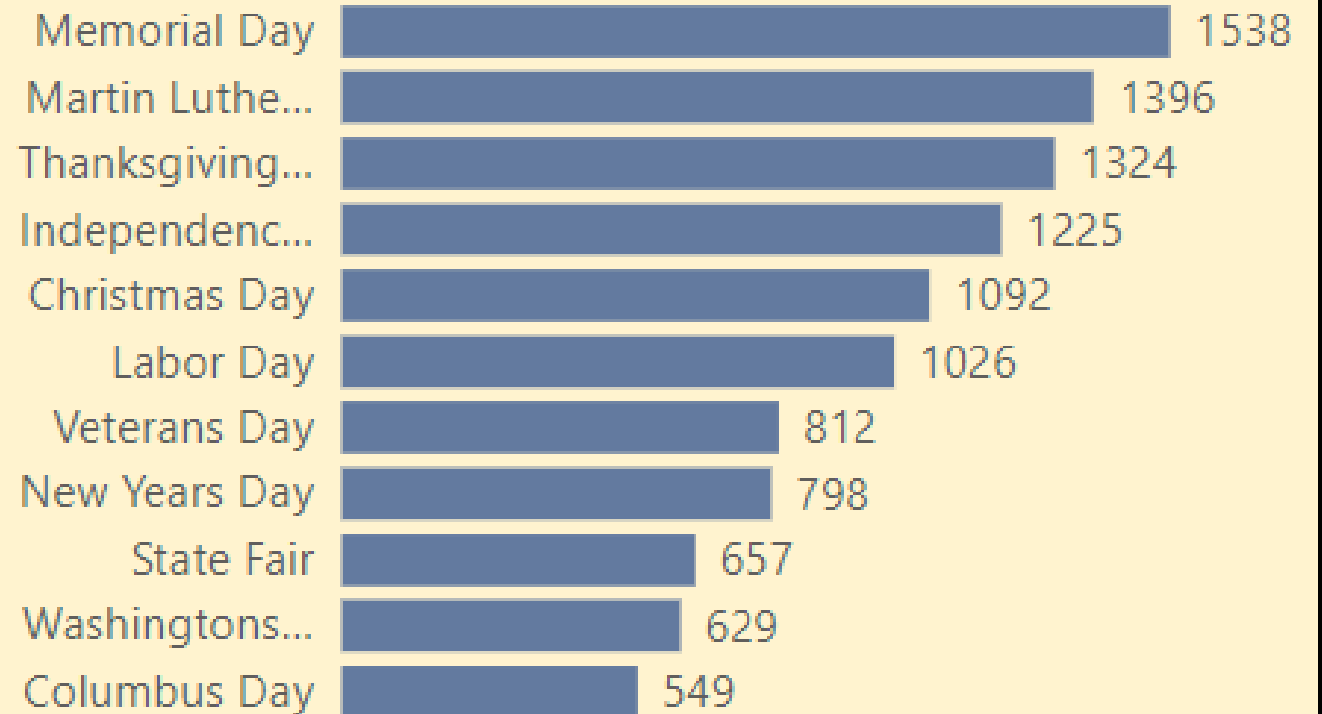
**August** - State fair starting in August .

---

**January** - High traffic on New Years and Martin Luther King Jr. Day contribute to most of January's total.

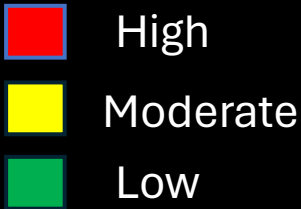
---

**Most holidays** have little impact on total traffic volume.





# Hours and days Traffic Pattern year (2017)



Patterns explains the Rush Hours during employees going to and from work.

Day ▲	0 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	13 PM	14 PM	15 PM	16 PM	17 PM	18 PM	19 PM	20 PM	21 PM	22 PM	23 PM
1	14812	10151	6272	6883	10499	33199	69105	80151	66924	65394	63106	64702	67401	72932	79279	83621	97495	93041	73811	49277	43086	40603	37823	24402
2	11970	7482	6035	6441	11400	29663	57962	60079	61590	51456	50719	54326	60884	64753	71813	79955	95899	78488	66318	46473	46224	38148	28665	20225
3	14005	8491	6058	5991	12028	36342	77989	88145	78491	72450	67771	63882	73385	68921	71107	86745	98425	95571	65617	47025	40356	37919	30488	19517
4	13667	7724	6132	5158	8095	21438	40879	45393	55621	67425	62298	53208	69968	71117	68865	77412	78079	82829	72147	50924	43807	45751	43989	27688
5	17255	12009	7108	5850	10787	25854	47483	51837	51580	57277	50029	56153	59457	60004	62506	63479	63600	70645	57840	39959	39872	33471	24412	16910
6	9684	6950	4910	4996	10332	32530	70577	86044	73780	76901	66156	61107	58962	53462	80887	90799	84205	84457	66068	58012	46682	40861	31060	23686
7	14914	6702	5352	5942	10998	38561	67837	77534	76964	75132	59889	64448	67644	72222	60775	65714	77390	67919	54822	41922	38728	36490	26902	20659
8	11044	6864	5146	5202	9172	28037	52541	59282	57297	53290	49630	54079	56351	56833	59908	64224	70418	66497	58791	45547	41537	35781	31012	20603
9	11384	6902	5012	4894	8556	26027	51289	59216	57322	53842	51124	54543	57178	75776	73374	77218	86372	100413	72612	46645	38478	34072	33146	22407
10	11479	7333	5144	4691	9786	29823	59016	77793	60230	62321	49750	60195	59710	65470	77168	78239	75773	78197	60360	44833	41333	34999	28093	18968
11	15538	8855	4687	6655	11147	34326	59326	70722	67142	61095	64350	68931	61786	57579	60530	64451	74785	75029	57080	44334	35575	37774	33267	26637
12	15816	9556	6300	5582	10527	33963	67285	67652	72592	61356	59487	54349	57363	57602	65500	78718	85045	80718	65703	46161	42258	36680	34248	23407
13	19507	7146	5585	4301	10020	26638	63461	59407	60724	55385	60976	60512	63312	68492	66696	66935	68234	63575	50135	42334	35883	35587	29631	17468
14	12681	8452	5753	5388	10062	27962	66211	73420	65388	66769	56610	56672	70486	59507	67882	83435	95837	95567	68895	60118	58370	55401	44810	34382
15	18790	11749	7956	8315	13448	31728	64881	72891	75395	65291	60799	65667	58096	61725	68646	74623	81911	65195	53101	48587	44490	38046	29468	21787
16	13295	7915	6867	7313	9754	30713	69889	79408	83738	61640	67824	68040	66472	67180	63914	62644	75656	77635	57159	62926	45864	41352	41854	20041
17	10760	6509	6221	5959	13859	40632	85347	86641	88818	96835	98439	80333	84486	86304	85979	91651	96788	82518	77987	57395	43356	43573	46645	22240
18	19387	10523	7596	6129	11332	31348	61100	70613	73793	76833	79077	78372	79053	74005	71133	92607	77653	72557	58559	45762	39604	35242	32217	23117
19	15094	10360	7508	7100	12271	32749	68673	76964	67450	78935	60775	60248	57847	58142	66539	71015	84083	84534	61667	50879	43457	37158	31726	21971



# Recommendations for Future Decisions

1

Conduct construction **between 12 AM to 5 AM.**

2

Schedule construction projects in **February.**

3

**Stay away** from clear or cloud weather days as possible.

4

**Utilize time scale filter** for traffic analysis for optimal construction scheduling

# Thank you

*Ahmed Elkady*  
*Business Intelligence Analyst*