Citizens for Appropriate Transportation

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This letter is intended for inclusion in the Public Record

June 19, 2012
Illinois Dept. of Transportation
c/o Mr. Peter Harmet and Mr. Mark Peterson
201 West Center Court
Schaumburg, IL 60196

SUBJECT: Round 2: Initial Combo Alternatives presented at the Corridor Advisory Group / Task Force Meeting on March 14, 2012 and May 2012 Update

Dear Mr. Harmet and Mr. Peterson:

Our major comments are:

1. We need better alternatives.
2. IDOT's Ranking System is flawed.
3. Relative Comparisons are misleading.
4. Congestion Pricing Projects have mixed results.
5. Interchanges
6. Questions

1. WE NEED BETTER ALTERNATIVES

This section makes four points:

a. The Build Alternatives fail to address the congestion problem.
b. The Build Alternatives score poorly against the evaluation criteria.
c. The five Build Alternatives for Round 3 do not reflect the full range of solutions.
d. IDOT should revise the alternatives to perform better.

a. The Build Alternatives fail to address the congestion problem.

IDOT's Draft of the Purpose and Need Statement (January 2012), says, "… traffic operations analysis of the existing I-290 mainline revealed that it experienced congested conditions, LOS D or worse, for 17 hours per day in the eastbound and westbound directions in 2009"[1] based on the methodologies contained in the Highway Capacity Manual. We assume the 17 hours refers to weekday, not the weekend. We are skeptical of the claim that congested conditions exist 17 hours a day, but for this letter, we are taking IDOT's numbers at face value.

We analyzed the General Purpose Lanes and the HOV/HOT/Toll Lanes separately.

1. General Purpose Lanes - Using IDOT's estimates, Chart 1 shows Congested and Uncongested Hours during a 24-hour Weekday for the General Purpose Lanes for the No Build, No Build 2040, and the ten Build Alternatives.[2]

- For the No Build, No Build 2040, and eight of the ten Build Alternatives, Congested Hours (shown in red) are much higher than Uncongested Hours (shown in green).
- For eight of the ten Build Alternatives, Congested Hours occur 16 or more hours during a weekday. Bear in mind that congestion is now 17 hours a day and IDOT estimates 18 hours a day for the No Build 2040 Alternative.
- For the last two Build Alternatives, Uncongested Hours exceed Congested Hours, but congestion still exceeds eight hours a day.

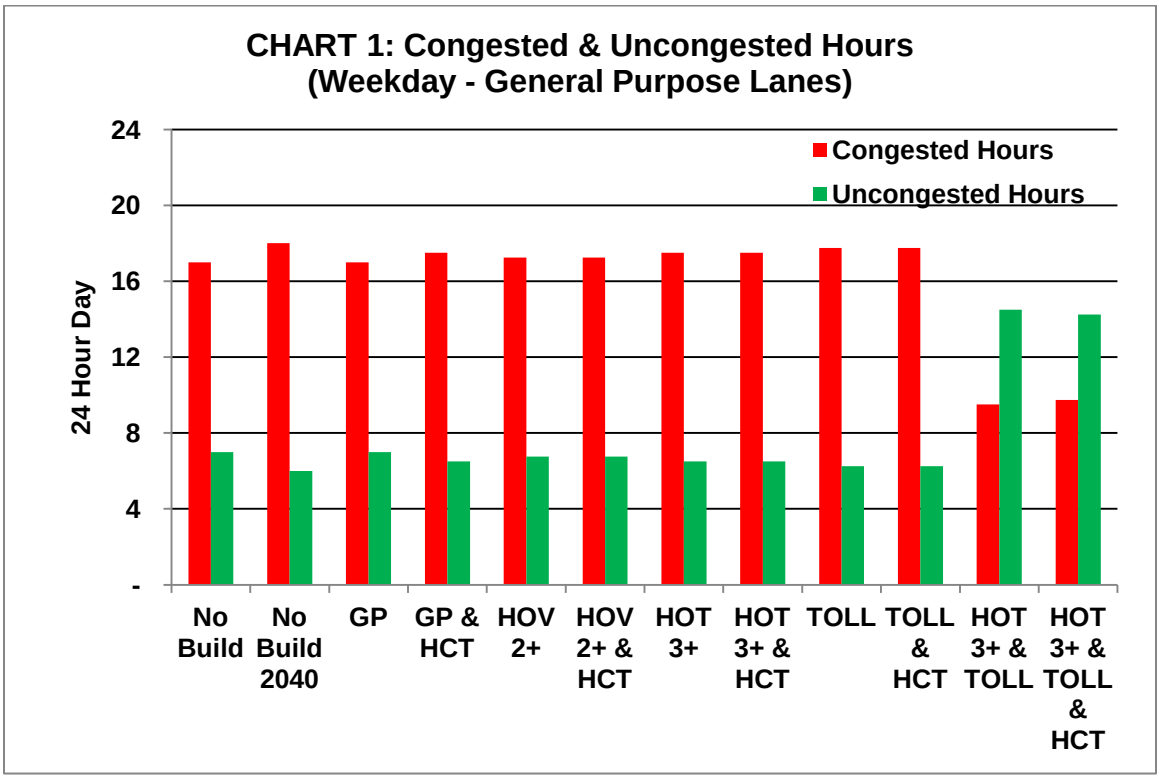
Given this high level of congestion, reducing congestion to 16 or more hours a weekday is not much of an improvement given the substantial cost and disruption involved during construction. For the General Purpose Lanes, the Build Alternatives do very little to reduce the number of congested hours on a weekday. They do not solve the problem.

2. HOV / HOT / Toll Lanes - Chart 2 shows Congested and Uncongested Hours during a 24-hour weekday for the eight Build Alternatives that include either HOV, HOT, or Toll Lanes. For this chart, we excluded the two Build Alternatives without HOV, HOT, or Toll Lanes.

- For all eight Build Alternatives, Uncongested Hours exceed Congested Hours on the HOV, HOT, or Toll Lanes.
- Congested Hours range from 2.5 to 6.5 hours per day.

[1] Draft Purpose and Need, January 2012, Page 4.

[2] Chart 1 is based on the Round 2 Purpose and Need Evaluation Measures, May 29, 2012 Draft.



Clearly, the results for HOV, HOT, or Toll Lanes are much better than for General Purpose Lanes. This, in and of itself, may not indicate an improvement in travel or the infrastructure; it may merely reflect a reallocation of existing capacity. However, in return for better results, drivers must pay a toll and in some cases, find one or two passengers in order to use the HOV 2+ or HOV 3+ lanes. Drivers must also spend time to pick-up and drop-off these passengers to what may be different origins and/or destinations.

Chart 3 shows the number of Congested Weekday Hours during a 24-hour period for General Purpose Lanes and HOV/HOT/Toll Lanes. The first two Build Alternatives only have General Purpose Lanes, so they have one column rather than the two columns the other eight Build Alternatives have.

- In the Build Alternatives with HOV 2+ and HOV 3+ Lanes, drivers who spend time to pick-up and drop-off at least one passenger will still experience some congestion. Drivers using the HOV 2+ or HOV 3+ Lanes with High Capacity Transit will experience more frequent congestion than the HOV Lanes without HCT Alternative – a conclusion that seems counter intuitive.

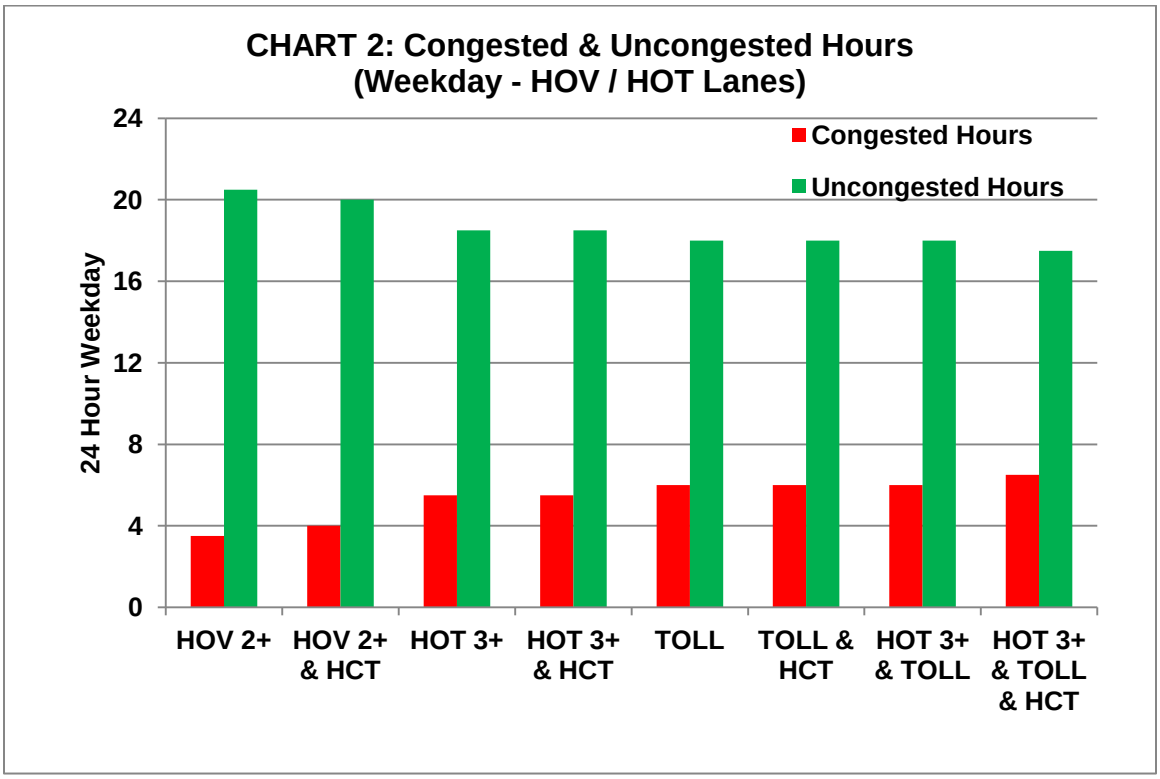


CHART 2: Congested & Uncongested Hours
(Weekday - HOV / HOT Lanes)
24 Hour Weekday
24
20
16
12
8
4
0
Congested Hours
Uncongested Hours
HOV 2+
HOV 2+ & HCT
HOT 3+
HOT 3+ & HCT
TOLL
TOLL & HCT
HOT 3+ & TOLL
HOT 3+ & TOLL & HCT

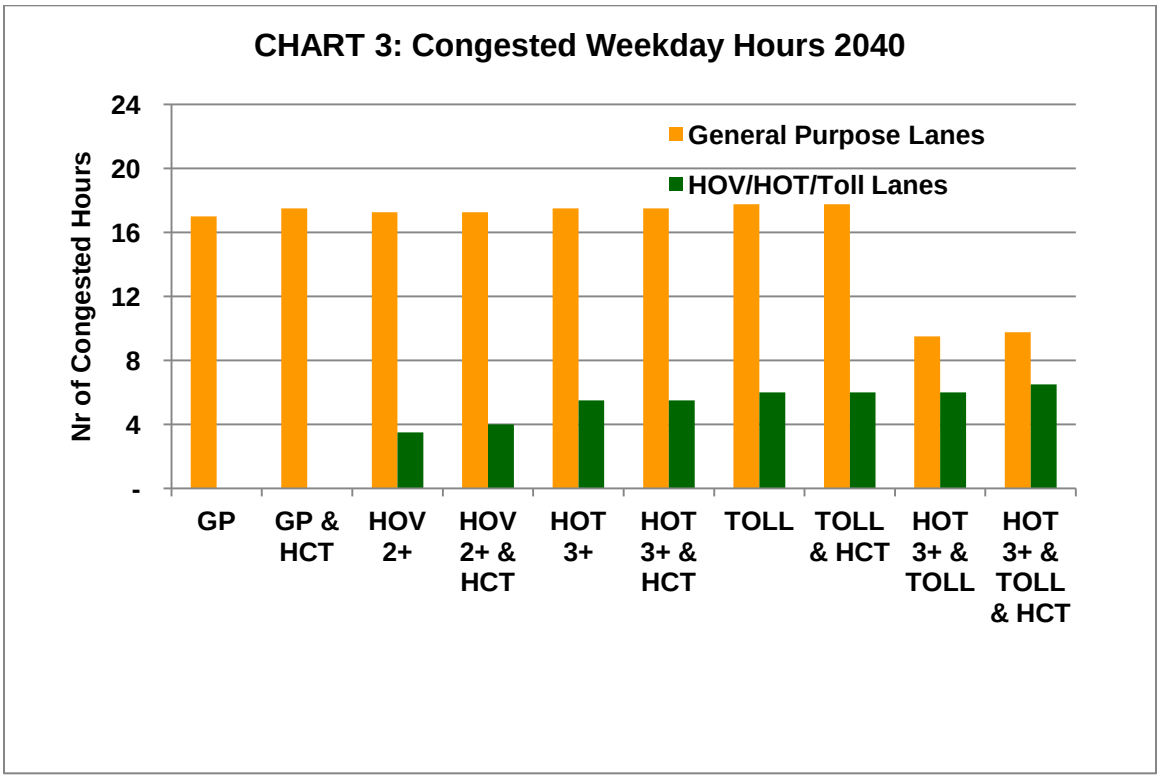


CHART 3: Congested Weekday Hours 2040
Nr of Congested Hours
24
20
16
12
8
4
-
General Purpose Lanes
HOV/HOT/Toll Lanes
GP
GP & HCT
HOV 2+
HOV 2+ & HCT
HOT 3+
HOT 3+ & HCT
TOLL
TOLL & HCT
HOT 3+ & TOLL
HOT 3+ & TOLL & HCT

- In the two Build Alternatives with HOT 3+ Lanes, drivers must pick-up and drop-off two or more passengers and pay a toll, however, High Capacity Transit will help reduce congestion for motorists.
- Drivers unwilling to pay the toll, or who cannot afford to pay the toll will still have to deal with congestion, so the Build Alternatives do not improve conditions for them.
- Of the ten Build Alternatives, the best performing alternative (HOT 3+ & Toll & Express Bus) reduces the 18 Daily Hours of Congestion on the General Purpose Lanes by 8.5 hours to 9.5 hours. The second best performing alternative adds High Capacity Transit to the mix of improvements, and reduces the 18 Daily Hours of Congestion on the General Purpose Lanes by 8.25 hours – a difference of 15 minutes between the two alternatives.
- On Page 9 of the I-290 Initial Alternatives Identification and Evaluation report (Draft Version 2.0 – May 2012), IDOT talks about "the ability of the HOT 3+ lanes to manage congestion that results in a relatively faster route (as compared to other combination alternatives) to jobs from the study area." Also on Page 9, IDOT says managed lanes provide a faster path than the General Purpose lanes, "allowing users of the managed lanes to access more jobs located further away in 60 minutes or less." HOT 3+ lanes require drivers to pay a toll, which means drivers who can afford tolls have access to more jobs within 60 minutes, but drivers who cannot afford them do not have the same access.

b. The Build Alternatives score poorly against the evaluation criteria.

Tables 1 and 2 summarize how well (or poorly) the ten Build Alternatives perform. When comparing a Build Alternative against the No-Build Alternative, there is a distinction between a Positive Measure (an increase in the performance score is better than a decrease) and a Negative Measure (a decrease in the performance score is better than an increase). Examples of Positive Measures are Jobs Accessible within 60 Minutes and Daily Person Throughput. Examples of Negative Measures are I-290 Average Travel Time, Daily Hours of Congestion, and Injuries and Fatality Rates.

The question we asked is: "How much improvement do we get for a significant capital expenditure spent on rebuilding and upgrading the Eisenhower Expressway?" We examined how many of the ten Build Alternatives improve conditions over the 2040 No Build option by six different percentages (25, 20, 15, 10, 5, and 1 percent). We used IDOT's Round 2 Purpose and Need Evaluation Measures (May 29, 2012 Draft), which compare the 2040 No Build and ten Build Alternatives against a set of Performance Measures. For those performance measures where IDOT used percentage differences from the 2040 No-Build Alternative (for example, I-290 Travel Time Changes and Daily Hours of Congestion), we calculated actual performance scores.

We tested the six percentages (25, 20, 15, 10, 5, and 1 percent) one at a time, starting with the No Build 2040 Score and adding or subtracting each percentage one at a time, depending on whether it is desirable to have the No Build Score increase or decrease.

Table 1 summarizes the Number of Criteria that Equal or Exceed six different percentages (25, 20, 15, 10, 5, and 1 percent).

1. Table 1 shows the first Build Alternative does not improve any of the 24 performance measures by 25, 20, 15, or 10 percent. At a five percent improvement, the first Build Alternative improves five of the 24 measures. At a one percent improvement, the first Build Alternative improves 11 of the 24 criteria.
2. Using 25 percent as an example, we did the following:
    a. For a Positive Performance Score where a higher score is better than a lower score, we said if the Build Alternative Score is greater than or equal to the No Build Score plus 25 percent, we scored it as a one. If not, we scored it as a zero.
    b. For a Negative Performance Score where a lower score is better than a higher score, we said if the Build Alternative Score is less than or equal to the No Build Score minus 25 percent, we scored it as a one. If not, we scored it as a zero
3. Looking at each of the percentages and the best performing Build Alternatives, we note the following:
    a. **25 percent or more** - two alternatives (HOT 3+ & Toll, with and without High Capacity Transit), improve in 3 criteria
    b. **20 percent or more** – one alternative (HOT 3+ & Toll & HCT) improves in 4 criteria
    c. **15 percent or more** – two alternatives (HOT 3+ & Toll, with and without High Capacity Transit), improve in 4 criteria
    d. **10 percent or more** –two alternatives (HOT 3+ & Toll, with and without High Capacity Transit), improve in 5 criteria
    e. **5 percent or more** –seven alternatives improve in 7 criteria
    f. **1 percent or more** – three alternatives improve in 13 criteria

Table 2 summarizes the Number of Build Alternatives that Equal or Exceed six different percentages, but summarized by Measure Name.

TABLE 1: Number of Criteria that Equal or Exceed the Given Percentage

Amount of Improvement	GP & EXP	GP & EXP & HCT	HOV 2+ & EXP	HOV 2+ & EXP & HCT	HOT 3+ & EXP	HOT 3+ & EXP & HCT	TOLL & EXP	TOLL & EXP & HCT	HOT 3+ & TOLL & EXP	HOT 3+ & TOLL & EXP & HCT
25%	0	0	2	2	2	1	2	2	3	3
20%	0	0	2	2	2	1	2	2	3	4
15%	0	0	2	2	2	2	2	2	4	4
10%	0	0	4	4	3	3	3	2	5	5
5%	5	5	7	7	7	7	6	7	7	7
1%	11	11	13	13	13	12	11	11	11	11
Nr of Criteria	**24**	**24**	**26**	**26**	**26**	**26**	**26**	**26**	**26**	**26**

For the first measure (I-290 Average Travel Time Changes (Peak Period) All Lanes, Table 2 shows that two of the Build Alternatives equal or exceed 25, 20, and 15 percent, seven of the Build Alternatives equal or exceed 10 percent, and all ten Build Alternatives exceed 5 and 1 percent.

At the lowest performance change, we examined (one percent), there are three Build Alternatives (3, 4, and 5) where 14 out of 26 criteria show improvement.

Table 3 summarizes how well (or poorly) the Build Alternatives work when compared to the quantitative criteria IDOT developed. We are on record in prior letters with our belief IDOT is not using all the relevant criteria. For purposes of this letter, we just used IDOT's criteria.

In Table 3, we calculated the percent difference between the 2040 No Build + Express Bus Service versus each of the ten Build Alternatives. For Positive Criteria, IDOT wants the performance measure to increase. For Negative Criteria, IDOT wants the performance measure to decrease.

The color code we used in Table 3 is as follows:

- 10 percent or more improvement - Dark Green
- 2.1 to 9.9 percent improvement – Light Green
- +/- 2 percent change – Yellow

TABLE 2: Number of Alternatives that Equal or Exceed the Given Percentage

Measure Name	Measure	Pos / Neg	25%	20%	15%	10%	5%	1%	Total Alternatives
I-290 Average Travel Time Changes (Peak Period) All Lanes	Minutes	N	2	2	2	7	10	10	**10**
I-290 Average Travel Time Changes (Peak Period) HOV/HOT	Minutes	N	5	6	8	8	8	8	**8**
Daily Hours of Congestion (I-290 in Study Area) GP Lanes	Hours	N	2	2	2	2	3	9	**10**
Daily Hours of Congestion (I-290 in Study Area) HOV/HOT Lanes	Hours	N	8	8	8	8	8	8	**8**
Daily Person Throughput	Persons	P	0	0	0	0	9	10	**10**
Vehicle Miles of Travel	Daily VMT	N	0	0	0	0	0	0	**10**
Vehicle Hours of Travel	Daily VHT	N	0	0	0	0	0	0	**10**
Congested VMT (Daily)	Daily VMT	N	0	0	0	0	0	0	**10**
Hours of Delay	Hours	N	0	0	0	0	0	0	**10**
Truck Miles of Travel	TMT	N	0	0	0	0	0	0	**10**
Truck Hours of Travel	THT	N	0	0	0	0	0	0	**10**
Congested TMT	TMT	N	0	0	0	0	0	0	**10**
Truck Hours of Delay	Hours	N	0	0	0	0	0	0	**10**
Peak Period Speed - E-W Arterials	MPH	P	0	0	0	0	0	6	**10**
Peak Period Speed - N-S Arterials	MPH	P	0	0	0	0	0	0	**10**
Vehicle Miles of Travel	VMT	N	0	0	0	0	0	6	**10**
Vehicle Hours of Travel	VHT	N	0	0	0	0	0	8	**10**
Congested Vehicle Miles of Travel	VMT	N	0	0	0	0	7	10	**10**
Hours of Delay	Hours	N	0	0	0	0	0	8	**10**
Jobs Accessible by Auto within 60 minutes	Nr	P	0	0	0	0	0	2	**10**

Measure Name	Measure	Pos / Neg	25%	20%	15%	10%	5%	1%	Total Alternatives
Jobs Accessible by Transit within 60 minutes	Nr	P	0	0	0	0	0	10	**5**
Jobs Accessible by Auto & Transit w/in 60	Nr	P	0	0	0	0	0	2	**10**
Injuries & Fatalities - Arterial	Million Vehicle Miles / Year	N	0	0	0	0	0	0	**10**
Injuries & Fatalities - Expressway	Million Vehicle Miles / Year	N	0	0	0	4	10	10	**10**
Overall Injuries & Fatalities	Million Vehicle Miles / Year	N	0	0	0	0	10	10	**10**
New Transit Trips (Regional)	Nr	P	0	0	0	0	0	0	**10**

TABLE 3: Summary of How the Build Alternatives Perform

Measure Name	Measure	Pos / Neg	2040 No Build + Exp	GP & EXP	GP & EXP & HCT	HOV 2+ & EXP	HOV 2+ & EXP & HCT	HOT 3+ & EXP	HOT 3+ & EXP & HCT	TOLL & EXP	TOLL & EXP & HCT	HOT 3+ & TOLL & EXP	HOT 3+ & TOLL & EXP & HCT
I-290 Average Travel Time Changes (Peak Period) All Lanes	Minutes	N	17.2	-5.4	-7.9	-11.8	-10.8	-12.4	-11.8	-12.0	-8.9	-34.6	-34.5
I-290 Average Travel Time Changes (Peak Period) HOV/HOT	Minutes	N	17.2	NA	NA	-40.6	-40.2	-25.3	-17.1	-40.1	-39.9	-16.7	-22.1
Daily Hours of Congestion (I-290 in Study Area) GP Lanes	Hours	N	18.0	-5.6	-2.8	-4.2	-4.2	-2.8	2.8	-1.4	-1.4	-47.2	-45.8
Daily Hours of Congestion (I-290 in Study Area) HOV/HOT Lanes	Hours	N	18.0	NA	NA	-80.6	-77.8	-69.4	-69.4	-66.7	-66.7	-66.7	-63.9
Daily Person Throughput	Persons	P	423,953	4.1	5.4	6.6	7.5	8.2	9.0	8.4	9.4	6.3	7.2
Vehicle Miles of Travel	Daily VMT	N	233,263,703	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0
Vehicle Hours of Travel	Daily VHT	N	10,319,255	-0.2	-0.3	-0.2	-0.2	-0.1	-0.1	-0.1	0.0	-0.2	-0.1
Congested VMT (Daily)	Daily VMT	N	17,937,393	-0.3	-0.4	-0.4	-0.3	-0.4	-0.3	-0.3	-0.2	-0.5	-0.5
Hours of Delay	Hours	N	5,237,381	-0.3	-0.5	-0.4	-0.4	-0.2	-0.2	-0.1	0.0	-0.4	-0.3
Truck Miles of Travel	TMT	N	44,488,408	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Truck Hours of Travel	THT	N	1,746,489	-0.2	-0.3	-0.1	-0.1	-0.1	-0.1	0.0	-0.1	-0.3	-0.2
Congested TMT	TMT	N	2,353,496	-0.4	-0.5	-0.3	-0.3	-0.4	-0.5	-0.2	-0.2	-0.9	-0.8
Truck Hours of Delay	Hours	N	856,318	-0.4	-0.5	-0.2	-0.3	-0.1	-0.2	0.0	0.1	-0.6	-0.4
Peak Period Speed - E-W Arterials	MPH	P	18.5	2.5	2.5	2.0	1.9	1.1	1.1	0.5	0.5	-1.8	-1.7
Peak Period Speed - N-S Arterials	MPH	P	17.2	0.1	0.3	-0.1	0.8	0.1	0.6	0.3	0.1	-0.3	0.2

Vehicle Miles of Travel	VMT	N	3,381,655	-2.0	-2.3	-1.1	-1.3	-1.2	-1.3	-0.7	-0.7	2.2	2.2
Vehicle Hours of Travel	VHT	N	211,807	-3.0	-3.6	-2.5	-2.9	-2.5	-2.6	-1.6	-1.8	1.0	1.1
Congested Vehicle Miles of Travel	VMT	N	239,165	-6.4	-8.1	-6.4	-7.3	-6.7	-6.9	-4.8	-5.2	-1.5	-1.5
Hours of Delay	Hours	N	101,880	-3.9	-5.0	-3.9	-4.5	-3.8	-4.0	-2.6	-2.9	-0.2	0.0
Jobs Accessible by Auto within 60 minutes	Nr	P	5,219,479	-1.2	0.1	-0.1	-0.1	0.3	0.4	0.3	0.3	1.4	1.7
Jobs Accessible by Transit within 60 minutes	Nr	P	4,006,033	1.7	1.4	1.7	1.4	1.7	1.4	1.7	1.4	1.7	1.4
Jobs Accessible by Auto & Transit w/in 60	Nr	P	9,225,512	0.1	0.7	0.7	0.6	0.9	0.8	0.9	0.8	1.5	1.6
Injuries & Fatalities - Arterial	Million Vehicle Miles / Year	N	0.519	0.00	-0.08	0.04	-0.08	0.06	0.01	0.11	0.06	0.21	0.14
Injuries & Fatalities - Expressway	Million Vehicle Miles / Year	N	0.219	-9.19	-8.60	-10.72	-10.55	-9.00	-8.83	-8.98	-8.72	-13.88	-13.70
Overall Injuries & Fatalities	Million Vehicle Miles / Year	N	0.31	-5.31	-5.76	-7.68	-8.45	-6.92	-7.60	-6.49	-7.11	-6.96	-7.44
New Transit Trips (Regional)	Nr	P	2,009,178	0.0	0.1	-0.3	-0.1	-0.2	-0.1	-0.3	-0.2	-0.2	-0.1

LEGEND

+>= 10 percent better = Dark Green 2.1 to 9.9 percent = Light Green + or – 2 percent = Yellow

Looking at Table 3, we can see the following:

- The predominant color is Yellow, meaning a difference of plus or minus two percent – a small difference given that the Year 2040 is 28 years away.
- The major improvements occur in the eight Build Alternatives with either HOV, HOT, or Toll lanes, a conclusion that is understandable given that the No Build Alternative only has General Purpose Lanes.

In summary, IDOT is suggesting that a substantial investment will not make much difference for most impacts.

c. The five Build Alternatives for Round 3 do not reflect the full range of solutions.

At CAG/TF Meeting #14 (June 11, 2012), IDOT identified the top five alternatives to be further evaluated in Round 3. The top five reflect a range of managed lanes, but they do not reflect the full range of transportation solutions. The top five solutions include HOV 2+, HOT 3+, Toll, and General Purpose lanes.

There are some solutions (or solution elements) IDOT did not consider. The following list is not comprehensive, but is intended to illustrate some possible solution elements. The list is not in any special order.

1. Improve transit so that it attracts more riders. Do not add more expressway lanes. The more drivers diverted to transit, the better the expressway will function.
2. Manage transit to complement the managed traffic lanes IDOT is already considering.[3]
3. Land use changes would lower Vehicle Miles of Travel. This would require active participation by the communities in the Corridor.
4. Adopt a Value Capture Program where transit receives a portion of the increase in value generated by development around transit stations.
5. Allocate a portion of road tolls to transit.
6. Develop Transportation Demand Management (TDM) programs to support reconstruction.
7. Convert one existing lane in each direction to HOV 2+ or HOV 3+ as a test.
8. Adopt Supporting Policies similar to those recommended in the RTA's Phase 2 Study for Cook-DuPage Corridor Study.

[3] The Chicago Tribune of Tuesday June 5, 2012 has a story about the CTA plan to shut the Dan Ryan Branch of the Red Line to fast track a construction project. Part of the CTA's plan is expanded bus service with a 50-cent discount on riders on many South Side bus routes. We point this out because a discount fare on the Forest Park Branch of the Blue Line would fill seats that are now empty, providing the CTA with more revenue. Both airlines and hotels use discount pricing to fill empty airline seats and hotel rooms.

9. Integrate the work the West Central Municipal Conference is doing on Systems Alternatives Analysis and Smart Corridors.
10. Calculate the number of lanes required to meet Level of Service D or better. It will be more than the eight lanes IDOT has in the Build Alternatives. Adding multiple new lanes would require property acquisition and relocation, so we do not recommend it, but the answer to the calculation would provide helpful information.

d. IDOT should revise the alternatives to perform better.

The CAG/TF Group already exists and includes many capable, interested professionals. We suggest using this group to generate additional ideas to make the alternatives under consideration noticeably better. One good way to do this is to conduct a Nominal Group Technique using the question: "How can we improve the Build Alternatives?" We would include the CAG/TF, IDOT staff, and consultants because all of us have an interest in a good solution.

Table 4 summarizes the performance of the Build Alternatives. There are 26 quantitative criteria and 10 Build Alternatives, so there are 260 cells in Table 3. Four cells are marked Not Applicable (NA), because the two General Purpose Lane Build Alternatives do not have any HOV / HOT lanes and two criteria apply to the eight Build Alternatives with HOV / HOT lanes. Therefore, there are 256 cells with impact scores. Table 4 shows that 63.3 percent of the impact scores changed by plus or minus 2 percent – a very small change when you consider the accuracy of the projection methodologies and the projections are for the Year 2040. Only 11.3 percent of the impact scores improve by 10 percent or more. To us, this means IDOT needs to revise the Build Alternatives significantly to get more improvement for the substantial capital cost involved.

TABLE 4: Summary of the Performance of the Build Alternatives

Percent Change	**Number of Performance Scores**	**Percent of Performance Scores**
10% or more Improvement	29	11.3%
2.1 to 9.9% Improvement	65	25.4%
+/-2% change	162	63.3%
TOTAL	**256**	**100.0%**

We believe we can (and must) do better given the size the investment IDOT wants to make. The current Build Alternatives do not solve enough of the identified problems. We are now in Round 2 of generating Build Alternatives, so we should use this as an opportunity to learn from the analysis to develop much better solutions in Round 3 and

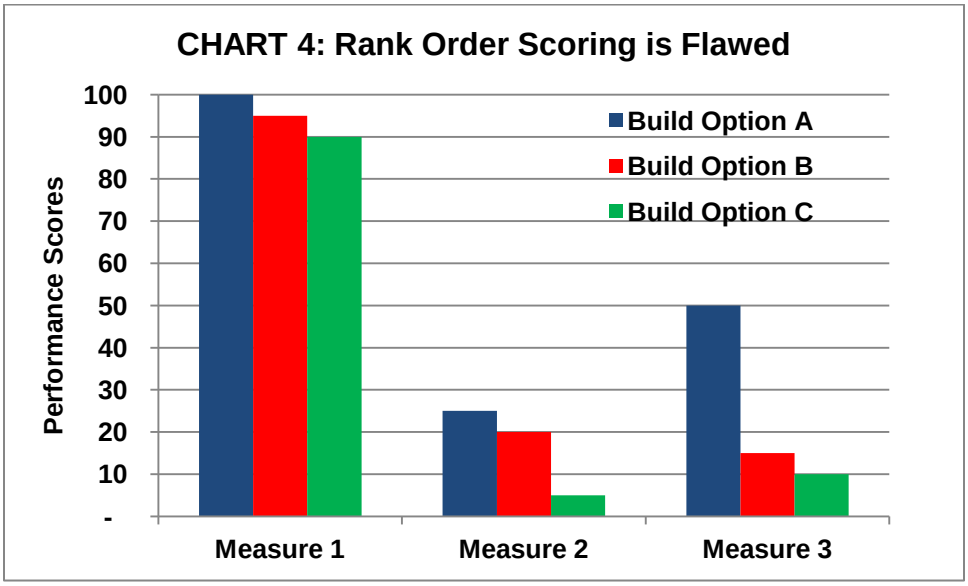
refine the Build Alternatives IDOT carries into the Environmental Impact Statement even more.

2. IDOT'S RANKING SYSTEM IS FLAWED

Statisticians use four levels of measurement: Nominal, Ordinal, Interval, and Ratio. The Appendix explains Levels of Measurement. Analysts should use ratio scales whenever possible because they provide the most information and lend themselves to the most thorough analysis. To its credit, IDOT used Ratio Scales for most of the Purpose and Need Evaluation Measures in the May 29, 2012 Evaluation Measures Matrix.

At the March 24, 2012 CAG/TF Meeting, IDOT handed out an oversize document called "Score by Sum of Need Point Rank," which uses an Ordinal Scale ranking of the Round 2 Build Alternatives. IDOT updated this document May 29, 2012. With ten Build Alternatives, IDOT scored the highest ranking alternative for each measure as a "10" and the lowest ranking alternative as a "1." For example, the first measure is "I-290 Average Travel Time Changes (Peak Periods). The alternative with the greatest reduction in Average Travel Time (-34.6%) was HOT 3+ & Toll & Express Bus Service so IDOT ranked it as a "10." The alternative with the smallest reduction in Average Travel Time (-5.4%) is GP & Express Bus Service, so IDOT ranked it as a "1."

Ordinal scales mask important differences among alternatives as illustrated in Chart 4. The chart has three Build Options (A, B, and C) and three performance measures where the higher the number, the better. The Rank Order of the three examples is identical, but there are significant differences between them, which an ordinal scale hides.



- For Measure 1, the performance scores for each Build Option are relatively close.
- For Measure 2, the performance scores for Build Options A and B are relatively close, but Build Option 3 has a much lower performance score.

- For Measure 3, the performance score of Build Option A is significantly higher than for Build Options B and C.
- An Ordinal Scale fails to account for the size of differences in the performance scores.
- In every case, the rank order of the options is the same. Option A ranks first, Option B ranks second, and Option C ranks third, but Chart 4 makes it clear there are significant differences among the three Build Options.

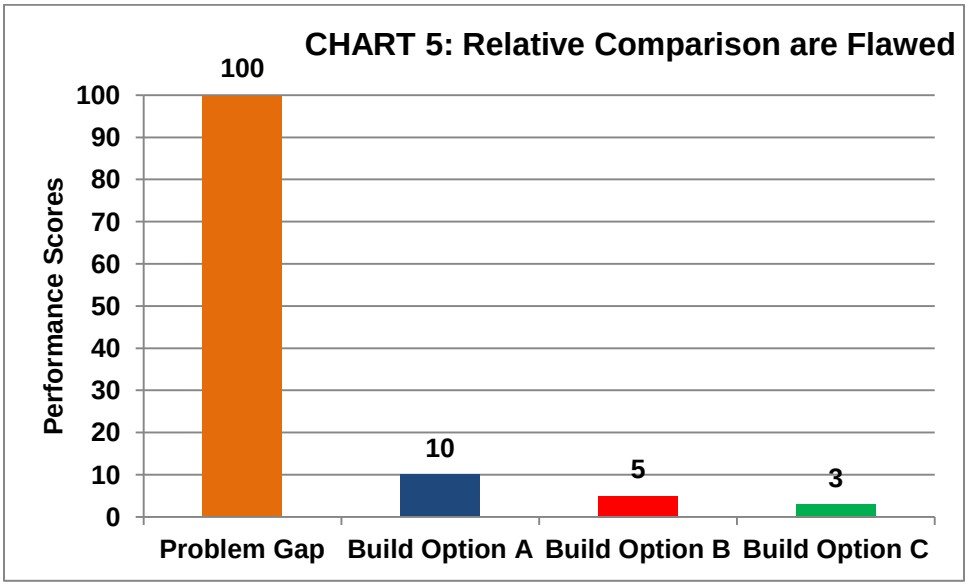
3. RELATIVE COMPARISONS ARE MISLEADING.

Using relative comparisons and not using absolute comparisons provides a misleading picture. If the problem is a performance gap of 100 points between where we should be versus where we are, then a good solution closes this gap (or at least comes close to closing this gap).

One good definition of a problem is the gap between the desired state and the actual state. A Descriptive Model says:

Problem = Desired State – Actual State

In Chart 5 below, the orange column illustrates the problem gap. The Desired State is a performance score of 100 and the Actual State is zero. The performance scores for Build Options A, B, and C are 10, 5, and 3 respectively.



- Build Option A is the best option among the three, but it only solves 10 percent of the problem. Build Option B ranks second, but only solves 5 percent of the problem. Build Option C ranks third, but only solves 3 percent of the problem.
- All three Build Options are poor choices given the size of the problem because Option A is the best of the three, but only solves ten percent of the problem.

- Relative Comparisons in this case fail to recognize that all three Build Options are poor choices.

Part of IDOT's rationale for using a rank order (Ordinal Scale) is the desire to provide a clear explanation of complex problems to citizens. Providing clear explanations is something we support strongly. However, using a better evaluation methodology and explaining it is a better way to go. In an effort to be clear, IDOT has selected a deficient methodology.

4. CONGESTION PRICING PROJECTS HAVE MIXED RESULTS

A United States Governmental Accountability Office (GAO) report found fourteen congestion pricing projects with current and complete evaluations.[4]

GAO found:

- "pricing can help reduce congestion, although other results are mixed, and not all possible relevant impacts have been assessed."[5]
- "some HOT lane projects also added new lanes, and studies did not distinguish the extent to which performance improvements were due to added lanes or pricing."[6]
- "although the number of cars using HOT lanes has risen, there were fewer people in those cars because of an increase in the proportion of toll-paying solo drivers or a decrease in carpools."[7]
- "Potential concerns include equity income impacts (whether low-income drivers are disproportionately affected by congestion pricing) and geographic equity (whether one geographic area more negatively affected than another such as where traffic diversion occurs)."[8]
- "Raising revenue can be at odds with managing congestion (e.g., increasing passenger throughput) if higher tolls can produce more revenue from fewer paying vehicles."[9]
- "Evaluations of the nine peak-period pricing projects with completed evaluations reported no effects on travel time and speed."[10]

[4] U.S. Government Accountability Office, Report to the Subcommittee on Transportation, Housing, and Urban Development and Related Agencies, Committee on Appropriations, House of Representatives, "Traffic Congestion – Road Pricing Can Help Reduce Congestion, but Equity Concerns May Grow," January 2012.

[5] Ibid, Page 2.

[6] Ibid, Highlights page (after the cover).

[7] Ibid, Highlights page.

[8] Ibid, Highlights page.

[9] Ibid, Highlights page.

[10] Ibid, Page 18.

5. INTERCHANGES

We have the following questions about the interchange concepts IDOT presented to the Village of Oak Park Board of Trustees on Monday June 11, 2012.

1. IDOT says left-hand ramps have a 49 percent higher crash rate than right-hand ramps. Are the ramps the cause as opposed to distracted driving, alcohol or drugs, and driving into the sun in peak hours? Transit has zero crashes in some years.
2. The proposed right-hand ramps move the source of expressway air pollution and noise closer to residential areas. This is a good illustration of why IDOT should consider environmental criteria when generating the Build Alternatives. We know IDOT is committed to preparing air quality and noise analyses, but only after narrowing down the range of alternatives. The difference is between considering environmental impacts as part of generating Build Alternatives versus considering just transportation impacts and then dealing with their environmental impacts.
3. The proposed ramps are elevated (in part) and longer, further dividing South Oak Park from the rest of the Village.
4. A motorist traveling north on either Harlem or Austin, who wants to turn right (east) on the Eisenhower Expressway must turn in front of buses using the bus lane. How do you propose to deal with this potential conflict?

6. QUESTIONS

On Monday June 11, 2012, IDOT made a presentation to the Village Board. Based on this presentation, we have the following questions about staying within the ditch.

1. Pete Harmet mentioned the possibility of narrower lanes and shoulders. If IDOT does, what impact does this have on safety? Can IDOT use "proven counter measures" intended to decrease accidents? What happens to the portions of Harrison and Garfield, which now have substandard widths?
2. Does IDOT need to acquire right-of-way from either the CTA or the CSX in order to get the space needed to add a fourth lane in each direction or to build any of the interchange concepts for Austin and Harlem?
3. Can the CTA widen its stations to meet both the requirements of the Americans with Disabilities Act and the National Fire Protection Association 130: Standard for Fixed Guideway Transit and Passenger Rail Systems? CTA Blue Line Station platforms in the Study Area do not meet either ADA or NFPA 130 requirements. Federal Highway Administration Policy says, "the action evaluated in each EIS" should "not restrict consideration of alternatives or other reasonably foreseeable transportation improvements." 23 CFR § 771.11(f)

If you need further information or want to meet to discuss these issues further, please feel free to contact us by telephone or e-mail. Thank you.

Sincerely,

Citizens for Appropriate Transportation

Rick Kuner
708/848-0942
rkuner@comcast.net

COPY TO: U.S. Federal Highway Administration – Illinois Division Office
U. S. Federal Transit Administration

APPENDIX (LEVELS OF MEASUREMENT)

There are four levels of measurement: Nominal, Ordinal, Interval, and Ratio. IDOT used Ordinal and Ratio Scales in its analyses. Analysts should use ratio scales whenever possible because they provide the most information and lend themselves to the most thorough analysis.

1. Nominal Scales are variables classified into mutually exclusive categories that are named but not ordered. Examples of nominal scales are religion, political party, race, zip code, and national origin. In a nominal scale, the analyst has a set of categories (such as zip code or political party) and puts each person (or case) in their proper category. It is not valid to add, subtract, multiply, or divide nominal scales. It is valid to calculate the proportion or percent in each named group.

2. Ordinal Scales are variables classified into mutually exclusive categories that are named and ordered. Examples of ordinal scales are rankings such as best, second best, third best; high, medium, and low; strongly agree, agree, disagree, strongly disagree; and good, fair, and poor. In an ordinal scale, there are a set of categories, the analyst puts each person (or case) in their proper category, and the analyst orders the categories. You cannot assume there are equal intervals between each category, and you cannot assume that each person doing the ranking is using the same values. If the categories are Good – Fair – Poor, it is clear Good is better than Fair, but you cannot measure the difference between Good and Fair. It is not valid to add, subtract, multiply, or divide ordinal scales. It is valid to rank categories from high to low (or low to high).

3. Interval Scales are variables classified into mutually exclusive categories that are named, ordered, and measured on a scale with an arbitrary zero. An arbitrary zero means a score of zero does not mean absolute zero. Temperature is a good example of an interval scale with an arbitrary zero, because zero degrees Fahrenheit does not mean the absence of any heat. In northern climates in Winter, temperatures below zero are common. Examples of interval scales are Intelligence Quotient (IQ), temperature, and PH (acid and alkaline). Calculating ratios with Interval Scales is not valid because

of the arbitrary zero. It is valid to say 60 degrees Fahrenheit is 30 degrees warmer than 30 degrees Fahrenheit, but it is not valid to say 60 degrees is twice as warm as 30 degrees. In an interval scale, the analyst has a set of categories, puts each person (or case) in their proper category, and measures the distance between two cases. It is valid to add, subtract, multiply, and divide interval scales, but ratios are not valid.

4. Ratio Scales are variables classified into mutually exclusive categories that are named, ordered, and measured on a scale with a meaningful, absolute zero. Examples of ratio scales are income ($), vehicles, population, age, years of education, and distance (miles). In a ratio scale, the analyst has a set of categories, puts each person (or case) in their proper category, and measures the distance and ratio between two cases. It is valid to manipulate ratio scales mathematically and ratios are valid.

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