

MATRIX: MODEL DESCRIPTIONS AND EVALUATIONS

Model	Basis	Strengths	Drawbacks
Current (null)	Contractor costs for each route calculated using chargeback formula to establish UCOA cost pools.	Uses exact monthly cost calculated for each route.	Magnifies effect of formula, replicating any empirical bias, since UCOAs and billing determined with the same formula. Time-consuming.
A. Student Count	Percentage of transported students in each UCOA category vs total Statewide transported students.	Simple, stable over time. Transparent.	Categories with more students but easier mission bear a higher percentage of total costs.
B. Student Distance	Percentage of student distance in each UCOA category vs total Statewide distance.	Time is main driver of resource requirements; mileage directly correlates. Simple calculation.	Only partly reflective of the other primary resource demand driver: number of transported students. Tends to understate categorical costs for with more total students but fewer miles.
C. Route Apportionment	Number of UCOA determined for each route. Percentage of route events is then calculated against the total of all routes. UCOA costs = % UCOA events x Total Contractor Cost.	Reflects that the demand for a bus is driven by the number of programs it serves. Simple to calculate.	Does not factor in the impact of the number of students being transported, time, or distance. Does not consider rate cost of different bus types.
D. Route Cost Apportionment	Same as Model C, but also incorporates the daily base rate for each bus.	Same as above, but better reflects basic cost of each bus. Ratios are more reflective of rate costs. Simple to calculate.	Also does not fully factor impact of student counts or miles (time) on required fleet assets used.

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E. Route/ Student Cost Apportionment	Cost by UCOA = Daily base rate x % students transported in each UCOA category. Percentage of total costs by UCOA is multiplied by total contractor costs to calculate cost pool amounts.	Reflects cost “load share” of students in each category on a per-route basis. Incorporates rate cost of assets used. Simple to calculate.	Does not reflect variances for each bus, such as mid-day, AM & PM runs, bus aides, etc.
F. Blended (A – E)	Averages the results of Models A – D.	Dampens collinear or empirical bias in the other models.	Complex: requires running four models. Statistical methodology empirically crude.
G. Direct Cost	Cost calculated on a student basis and extrapolated according to their UCOA category. Detailed to individual AM/ PM/ Mid-day runs & rates. Support personnel (Aides, monitors are included.	UCOA values are an output, not input. Directly tied to bus contractor reconciliation. Intuitively fair and transparent. Allows reconciliation and billing to be a single process. Very useful to spot routes with low PAX utilization.	Impact on resources used not directly reflective of miles/ time (though likely colinear with assets needed for number of students transported). <i>Possible</i> bias against long, low density routes (Though this is fair).



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PRELIMINARY CHARGEBACK FORMULA ASSESSMENT

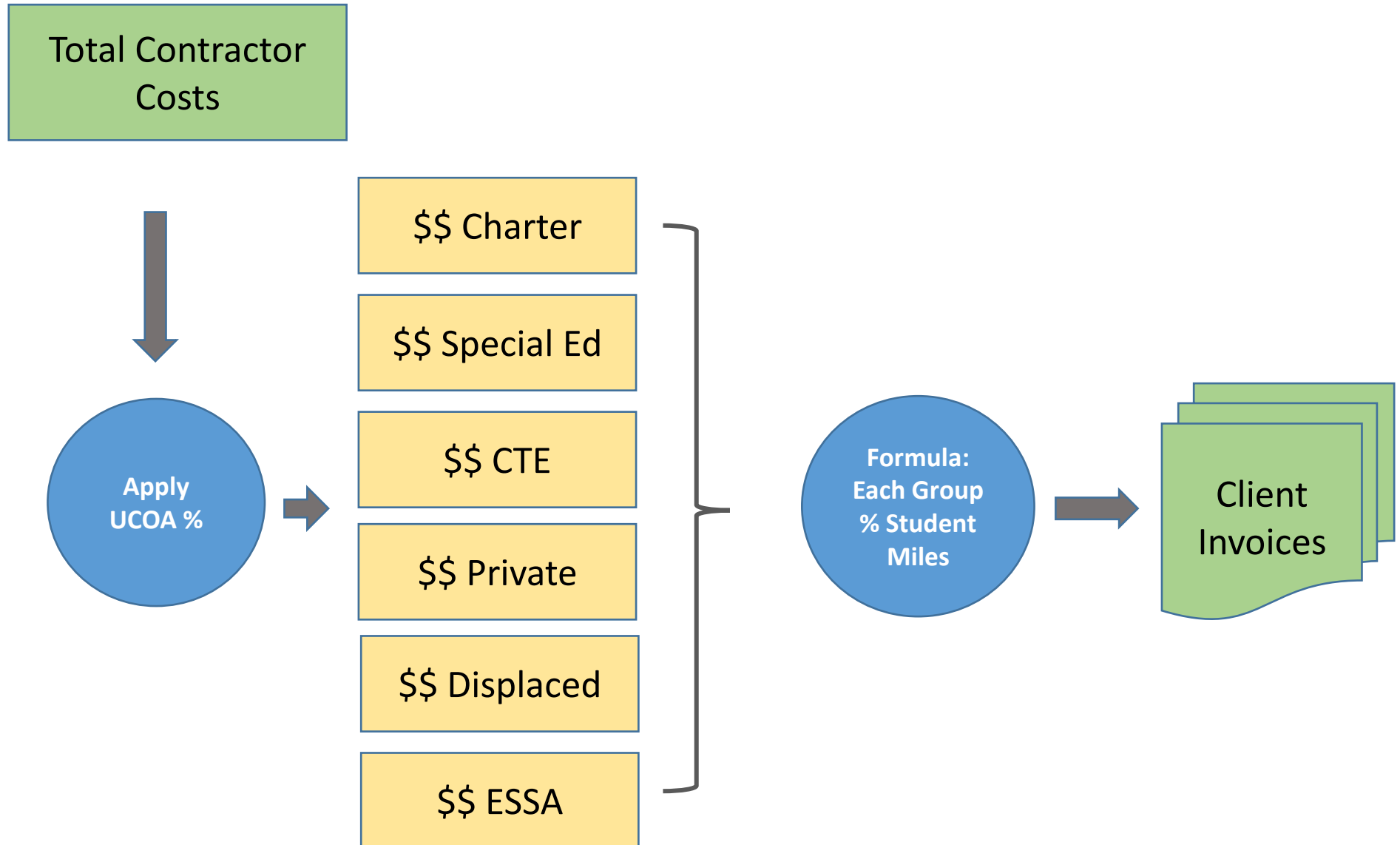
RIDE

March 14, 2023

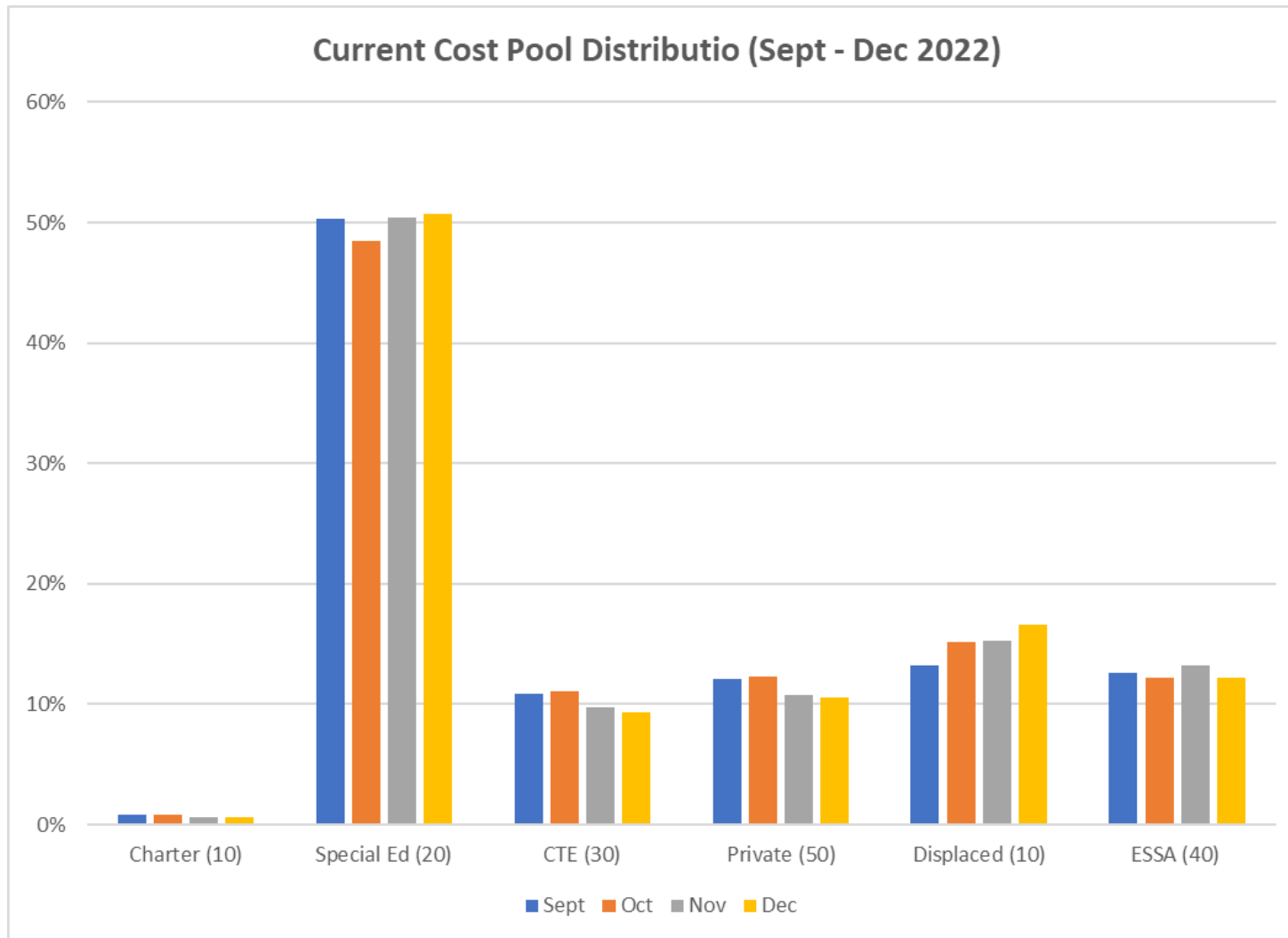
BACKGROUND

- ❑ *2010: Began with actual rider-based billing model (RTS)*
- ❑ *2013: RIDE wanted a “shared allocated cost model*
- ❑ *Collars applied to dampen impact of formula change*
- ❑ *Allocated model originally had two UCOA categories*
- ❑ *New programs and expansion required addition of three UCOA categories*
- ❑ *Empirical bias may/ may not have appeared*
- ❑ *However, elastic effect of small changes with smaller districts became a chronic concern*

CURRENT PROCESS



CURRENT UCOA

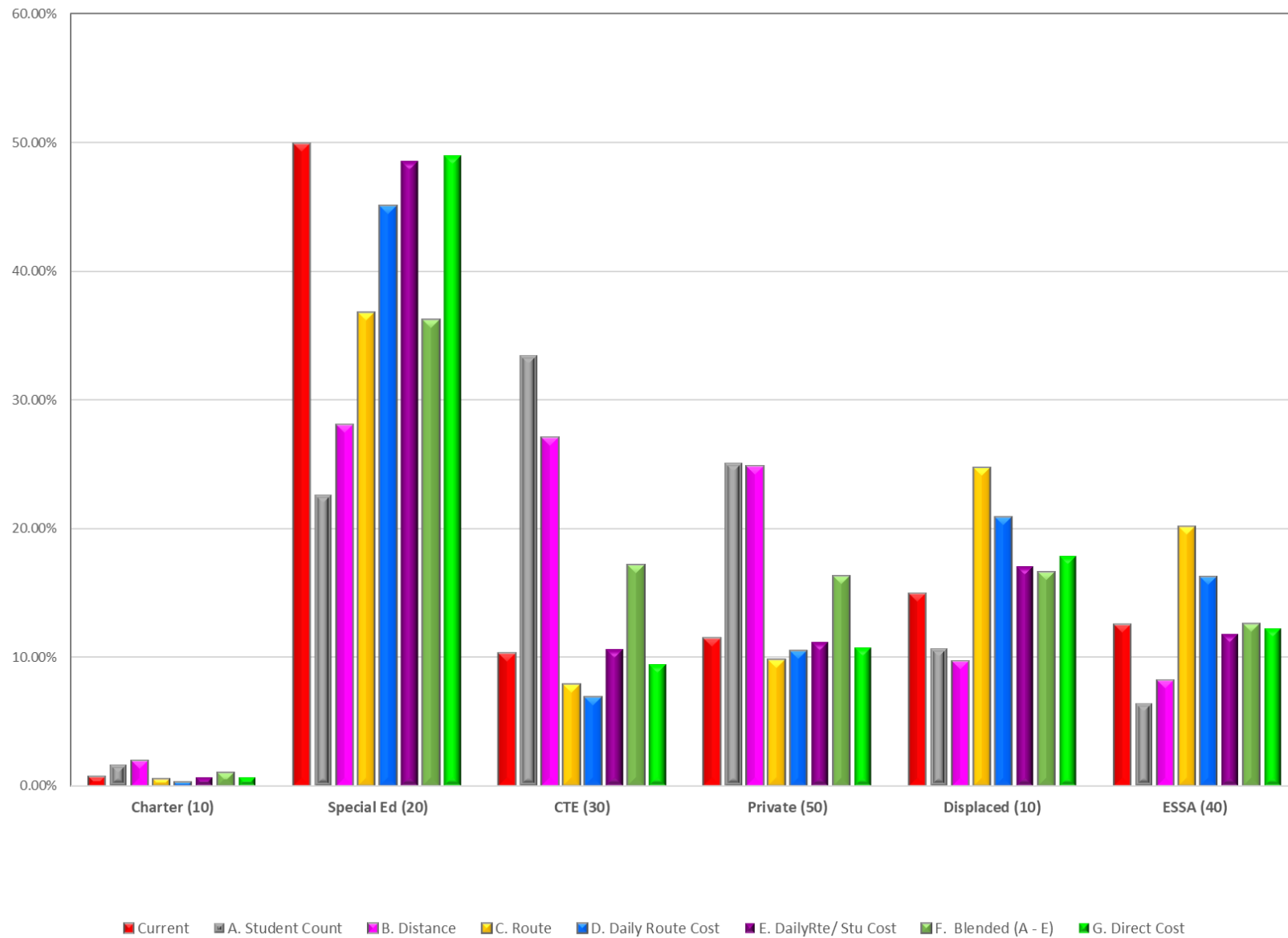


MODELS EVALUATED

- ☐ A. Student Count
 - ☐ B. Student Distance
 - ☐ C. Route Apportionment
 - ☐ D. Daily Route Cost
 - ☐ E. Daily Route Student Cost
 - ☐ F. Blended (Models A through E)
 - ☐ G. Direct Cost (Not UCOA-based)
- ➔ *Refer to matrix handout for comparison*

MODEL RESULTS

Total Cost by UCOA Category



INITIAL RECOMMENDATION

DIRECT COST MODEL

- ❑ Immediately ties reconciled vendor charges to billing as a single process
- ❑ Ties numbers directly to source values (contractor)
- ❑ All charges are included (extra hours, aides, monitors, etc.)
- ❑ UCOA changes are not determinative but the result of the formula calculation
- ❑ Limits changes in billing from logistical changes in adjacent peer LEA's
- ❑ Good source for determining potentially under-utilized routes ("*Route Yield Lite*")

QUESTIONS / CHALLENGES

- ☐ Transition issues
- ☐ System Manager costs – explicit or embedded?
- ☐ Outreach to client LEAs and schools
- ☐ Other?





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THANK YOU

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