ENGINEERING OPERATIONS COMMITTEE MEETING MINUTES
DECEMBER 23, 2020, 9:00 A.M. – 11:00 A.M.
VIA TEAMS

Present:	Carol Aldrich	Mark Geib	Brad Wieferich
	Mark Bott	Jason Gutting	Gorette Yung
	Gregg Brunner	Tony Kratofil	Hal Zweng
	Matt Chynoweth	Ryan Mitchell	
	Mark Dionise	Kristin Schuster	
Absent:	Rebecca Curtis	Brandy Solak	Will Thompson
Guests:	Trevor Block	Art Green	Justin Schenkel
	Michael Eacker	Kevin Kennedy	Jami Trudelle
	Cory Gardner	David Kent	Dharmesh Valsadia
	Jason Garza	Ben Krom	

OLD BUSINESS

1. Approval of the November 25, 2020 Meeting Minutes – Tony Kratofil

   ACTION: Approved

2. Michigan Department of Transportation (MDOT) New Materials and Products – Jason Gutting

   a. New Material Monthly Report of Data

   - ❖ Number of Submittals Received
   - ❖ Number of Submittals Accepted
   - ❖ Number of Submittals Not Accepted
   - ❖ Biannual Qualified Products List Revisions

   ACTION: For information only.

NEW BUSINESS

1. Safety Topic: Parent/Caregiver Self-Care – Ryan Mitchell

   <See Appendix A at end of document>

   ACTION: For Information Only

2. New Engineering Operations Committee (EOC) Mentee – All EOC members

   The term for the current mentee, Gorette Yung, is nearing its end and the Committee will discuss a replacement.

   - Tony will take this topic to the Region Bureau Management Team meeting for discussion.
   - Gorette Yung stated that serving a term of three years is a better option than the current two-year duration since it takes time to understand all of the facets of the EOC.

   ACTION: For Information Only

3. Pavement Selection: M-153 from West of Sheldon Road to I-275, Wayne County – Ben Krom

   Subject/Issue: Pavement Selection.

   Route/Location: M-153: from West of Sheldon Road to I-275, Wayne County
   Job Number: 123138
   Control Section: 82081
   Letting Date: 12/3/2021

   Department policy requires that a Life Cycle Cost Analysis (LCCA) be used to determine the most cost-effective pavement design.

   Major Issue(s) – None. The paving industries had no comments on this LCCA.

   Background/History – Pavement selection was determined using the procedures outlined in the MDOT Pavement Selection Manual. Department policy requires that the pavement alternate with the lowest Equivalent Uniform Annual Cost (EUAC) be selected. Final pavement selection requires approval by the Engineering Operations Committee.

   Recommendation(s) – Approve the pavement alternate with the lowest EUAC.

   ACTION: Approved

4. Road Diet in the City of St. Ignace: Proposed Three-lane Conversion on Two Segments of I-75BL – Cory Gardner

   Issue Statement – Road Diet in the City of St. Ignace.

   Major Issue(s) – Proposed three-lane conversion (two segments on I-75 BL).

   Background/History – The "downtown portion" of the city was reconstructed as a three-lane segment in 1998. The three-lane was then extended north to Antione Street in 2018. This proposal would extend the three-lane both directions from I-75 to North Airport Road.

   Recommendation(s) – Convert the proposed segments on I-75 BL (Church Street to High Street, and Antoine Street to North Airport Road) to three-lane.

   Status – Public information meeting was held on December 7th. The City of St. Ignace has formally passed a resolution of support. All items in the road diet checklist have been completed.

   ACTION: For Information Only

5. Updated Guidance on MDOT Life Cycle Cost Analysis New Fix Type Design, Comparisons and Requirements – Justin Schenkel

   Issue Statement – Expansion of fix types that are life-cycled, UPDATED

   The Pavement Management Section has developed performance curves based on MDOT data for pavement fix types that are not currently life cycled. These fixes include the following:

   - Asphalt Stabilized Crack Relief Layer (ASCRL), Hot Mix Asphalt (HMA) multi-course overlays/resurfacing, crush and shape, and thin concrete overlays.

   To provide guidance on how these fixes will be designed and life-cycled, the Pavement Management Section created a guidance document. This document was recently updated per consultation with MDOT region personnel and MDOT industry partners.

   Major Issue(s) – To approve the updated guidance on 'MDOT LCCA New Fix Type Design, Comparisons, and Requirements' as agreed to by MDOT personnel, including those from the central office, regions and MDOT industry partners.

   Background/History - The original version of this guidance was officially approved by EOC per the June 25, 2020 EOC Meeting. This request is to update that original version with the following changes:

- Notation to clarify that design life may require adjustment to create equivalency during the pavement design phase due to project specific conditions that do not allow for proper fix type comparisons.
- Noted that a separator may be needed for concrete overlays.
- Added minimum existing HMA and Portland Cement Concrete thickness requirements for overlay.
- Corrected "Table 4" and the notation below to remove the condition requirement.
  - MDOT Region personnel did not think that this notation was helpful and made the fix type selection overly complex.
- Added a few more potential fix type limitations that may exclude LCCA or part of the LCCA.
- Added notation to include shelf jobs.

Specific changes are shown in the attached 'MDOT LCCA New Fix Type Design, Comparisons, and Requirements' guidance document.

These updates were reviewed and accepted by the MDOT Pavement Management team, region personnel, and MDOT industry partners.

Below is the original submittal background information provided for the June EOC meeting:

> "The department shall develop and implement a life-cycle cost analysis for each project for which the estimated total pavement costs exceed $1,500,000.00 funded in whole or in part with state funds."

Since this law was originally enacted in 1998, we have included four fix types in our life-cycle program: HMA reconstruct, concrete reconstruct, rubblization with HMA resurfacing, and unbonded concrete overlays. Many of the other fix types in the Reconstruction and Rehabilitation program have not been life-cycled because we did not have performance curves for them. In 2016, the Pavement Management Section embarked on a massive data gathering task to gather the necessary information to be able to develop the needed performance history, maintenance history, and maintenance costs to be able to develop performance curves for the fixes listed above that were not being life-cycled.

Once these curves were finally established, an implementation plan was developed to lay out what fixes would be the two alternatives to be compared in a life-cycle cost analysis in different situations, and the design methodology that would be used to create equivalent designs. This plan was first reviewed by the life-cycle stakeholders within region staff. After region comments were incorporated, the plan was then sent to the paving industry associations for their review and comment. The final version is included with this submittal.

Implementation would include any projects of these new fix types that are being let after January 1, 2023 to be life-cycled. This implementation would not affect our current life-cycle process involving reconstructs, rubblize, and unbonded concrete overlay projects.

Recommendation(s) – Approval of the updates made to the 'MDOT LCCA New Fix Type Design, Comparisons, and Requirements' guidance document.

ACTION: Approved

6. Industry Concerns and MDOT's Continued Use of the Pavement Mechanistic Empirical (ME) Design Method – Justin Schenkel

Issue Statement – MDOT memorandum on the Michigan Concrete Association's (MCA) concerns with the Pavement ME design method.

MCA representatives have brought forward concerns with MDOT's use of the Pavement ME design method. Their concerns were presented and discussed at the ME Oversight Committee Meeting-ME Review, Ongoing Research, and Remaining Tasks on November 18, 2020. A memorandum was comprised to summarize the issues and responses from MDOT and both industry groups.

Major Issue(s) – The MDOT Pavement Management Section possesses a memorandum that summarizes the MCA's concerns and provide responses from the Asphalt Pavement Association of Michigan (APAM) and MDOT. Note that this memorandum was reviewed by those who attended the referenced meeting, which includes MCA and APAM personnel. They provided feedback, which was included in the memo, to ensure that the meeting topics and responses were accurately captured.

Background/History – MDOT is undergoing the process to fully implement Mechanistic-Empirical (ME) design per the American Association of State Highway and Transportation Officials (AASHTO) Mechanistic-Empirical Pavement Design Guide and its associated software, AASHTOWare Pavement ME Design (Pavement ME). To facilitate the implementation of ME as the MDOT standard design method, MDOT established an oversight committee team, (ME OC). This team oversees the business process changes for pavement design and necessary research needs. Additionally, they assist with decisions on design criteria and input values. The ME OC is comprised of various areas of MDOT (including representatives from all regions), external partners, and the concrete and asphalt paving industries. Per this team, an MDOT interim user guide for ME pavement design was created and a six-step transition plan for implementation of ME was proposed as follows:

- Preliminary Phase – Past but recent LCCA projects to validate official start
- Phase 1 – Life Cycle Cost Assessment (LCCA) and Alternate Pavement Bidding (APB) reconstruction projects
- Phase 2 – All (including MDOT region/Transportation Service Center) reconstruction projects
- Phase 3 – LCCA/APB rehabilitation projects (and all reconstruction projects)
- Phase 4 – All (including MDOT Region/TSC) rehabilitation projects (and all reconstruction projects)
- Phase 5 – Final recommendations for full implementation

Phase 1 started in March of 2015. Phase 1 results were summarized and approved by the EOC in late 2019, so MDOT is currently in Phase 2 of MDOT's ME implementation process.

Note that MDOT currently designs new/reconstruction projects using a 20-year design life, starting with the initial pavement designs derived using AASHTO 1993 methodology and final designs derived using ME methodology. The final recommended pavement design from ME is restricted to be within 1 inch from the AASHTO 1993 result.

Recommendation(s) – The MDOT Pavement Management Section recommends no changes to the department's pavement design methodology and that MDOT should continue to use Pavement ME (with the same restrictions in place).

<See Appendix B at end of document>

ACTION: Approved

7. Approval for the Use of Design-Build Contracting Method on US-131 NB/SB Reconstruction in Byron Township, Kent County – Ryan Mitchell/Dharmesh Valsadia/David Kent

Issue Statement – Request approval for the use of Design-Build contracting method on eight Miles of US-131 NB/SB reconstruction in Byron Township, Kent County (JN 210072). Current four lane divided roadway is to be reconstructed with enclosed drainage and weave/merge lanes between 76th to 84th Street.

Major Issue(s) – The project corridor has Average Daily Traffic of 60,000 vehicles and maintenance of traffic will likely require maintaining four lanes of traffic during construction. No directional traffic is observed, and a lack of detour routes limits the restriction to one lane in each direction. Along with reconstruction of roadway, the project contains possibility of upsizing several culverts to box culverts. While other risks are limited, increased impervious area might result in additional drainage, environmental and permitting requirements. This is a one season construction project. Overlapping final design and construction phases through the design-build process is recommended to achieve schedule acceleration and reduce traffic, mobility, and safety impacts.

Background/History – The project is approximately $37M funded by the Rebuilding Michigan program. The tentative let date is October 2023.

Recommendation(s) – The Innovative Contracting Committee has recommended the use of the Design-Build contracting method for JN 210072 considering the project is in its initial phase, the work type, and the potential for innovations to accelerate construction and reduce congestion by partnering with industry on solutions for maintenance of traffic and construction means and methods.

Status – New

ACTION: Approved

8. Road Diet: I-69 Service Drives in the City of Flint – Trevor Block

Issue Statement – Proposed Road Diet on I-69 Service Drives in the City of Flint; Proposed Lane Reduction on 8th Street and 9th Street One-Ways.

Major Issue(s) – Bay Region 2021/2022 Job Number 132026, Reconstruction of I-69 from Fenton Road to Dort Highway, proposes to reconstruct the one-way service drives, adjacent to I-69, just west of I-475 in downtown Flint. The existing three lanes on each roadway provide 300% capacity for existing and future volumes and creates a maintenance cost that is difficult to justify.

Background/History – Since the construction of I-69 through Flint, traffic volumes have decreased by 60%. Future traffic models provide a 20-year growth rate of 0.5%, annually. The City of Flint Master Plan supports a future of right-sizing infrastructure to meet the current/future needs, while providing a more inviting and walkable Flint. The Road Diet Checklist has been completed for each roadway and is available in ProjectWise. A resolution from the City of Flint was not received due to COVID-related reasons.

Recommendation(s) – Approve the proposed lane reductions on 8th Street and 9th Street for JN 132026.

ACTION: For Information Only

Digitally signed by:
Carol Aldrich
Date: 2021.03.29 14:56:58 -04'00'

Carol Aldrich, Secretary
Engineering Operations Committee

RA:lrb

cc: EOC Members
Meeting Guests
Region Engineers (MDOT)
Assoc. Region Engineers (MDOT)
TSC Managers (MDOT)
L. Doyle (MDOT)
C. Libiran (MDOT)
R. Lippert (MDOT)
L. Mester (MDOT)
C. Newell (MDOT)
T. Schafer (MDOT)
R. Jorgenson (FHWA)
R. Brenke (ACEC)
G. Bukoski (MITA)
D. DeGraaf (MCA)
C. Mills (APAM)
D. Needham (MAA)
M. Ackerson-Ware (MRPA)

Appendix A

December 23, 2020 Safety Topic

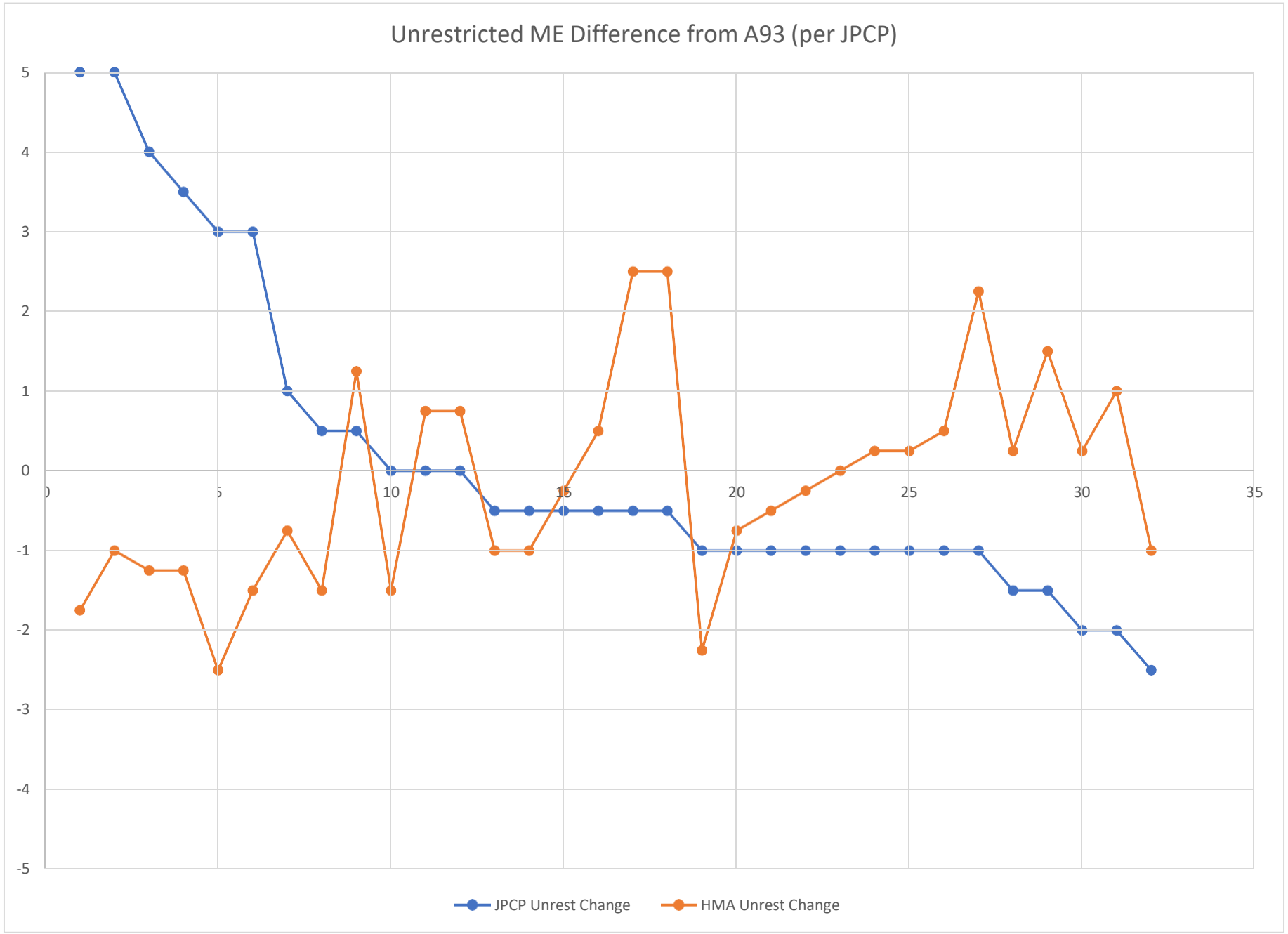
Help! I'm stuck at home with my kids!

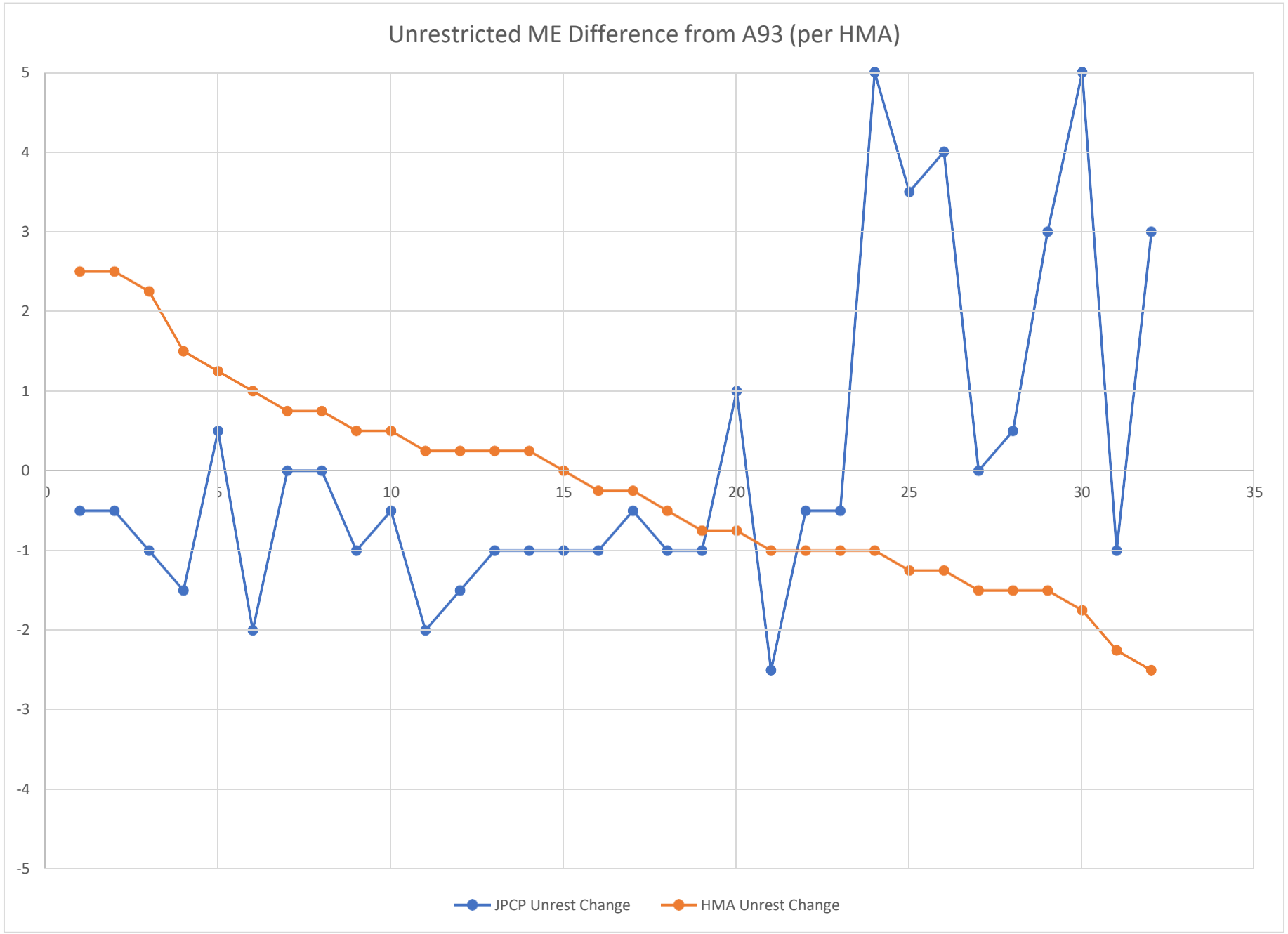
- **Parent/Caregiver self-care**
- Many parents and caregivers, working from home, are trying to manage multiple work schedules as well as online school
- **It is a lot.**
- Recognizing this, try not to stretch yourself too thin
  - **Be gentle with yourself** and with each other
  - Try to let go of unrealistic expectations of "normal" to accommodate this **temporary** reality
- We do not do our best work when we are overstressed, and it can impact our health as well as our children's
- We must find time to support our own mental well-being
  - Some tips for helping ourselves and our remote learners/co-workers:
    - Make time to listen to them
    - Take breaks to stretch, exercise, and play (join them and have some fun!)
    - Be aware of what they see and hear on television, the radio and online (limit media exposure)
    - Learn what they already know (and respond to their questions)

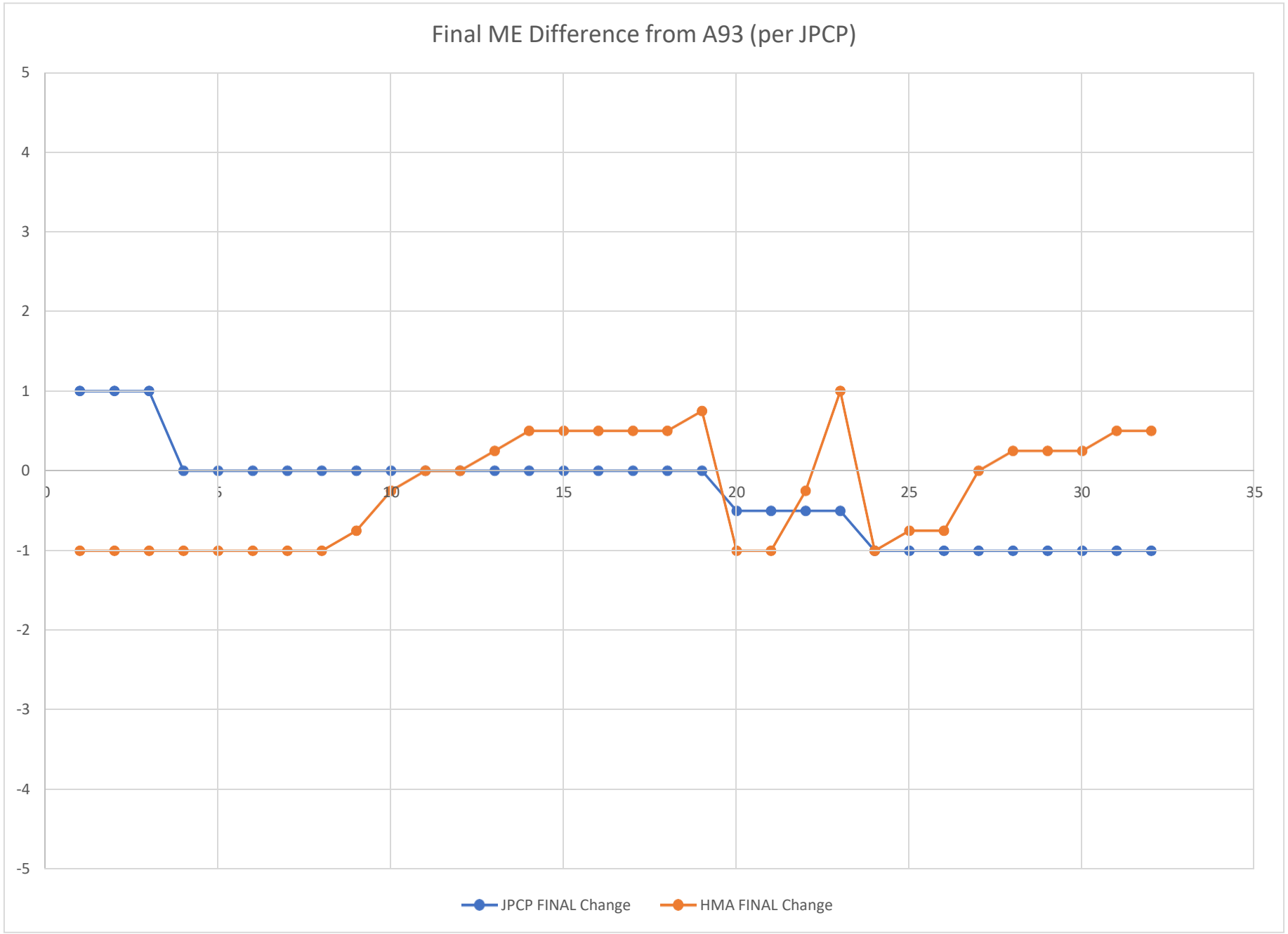
- Maintain or implement routines (and when to let it go!)

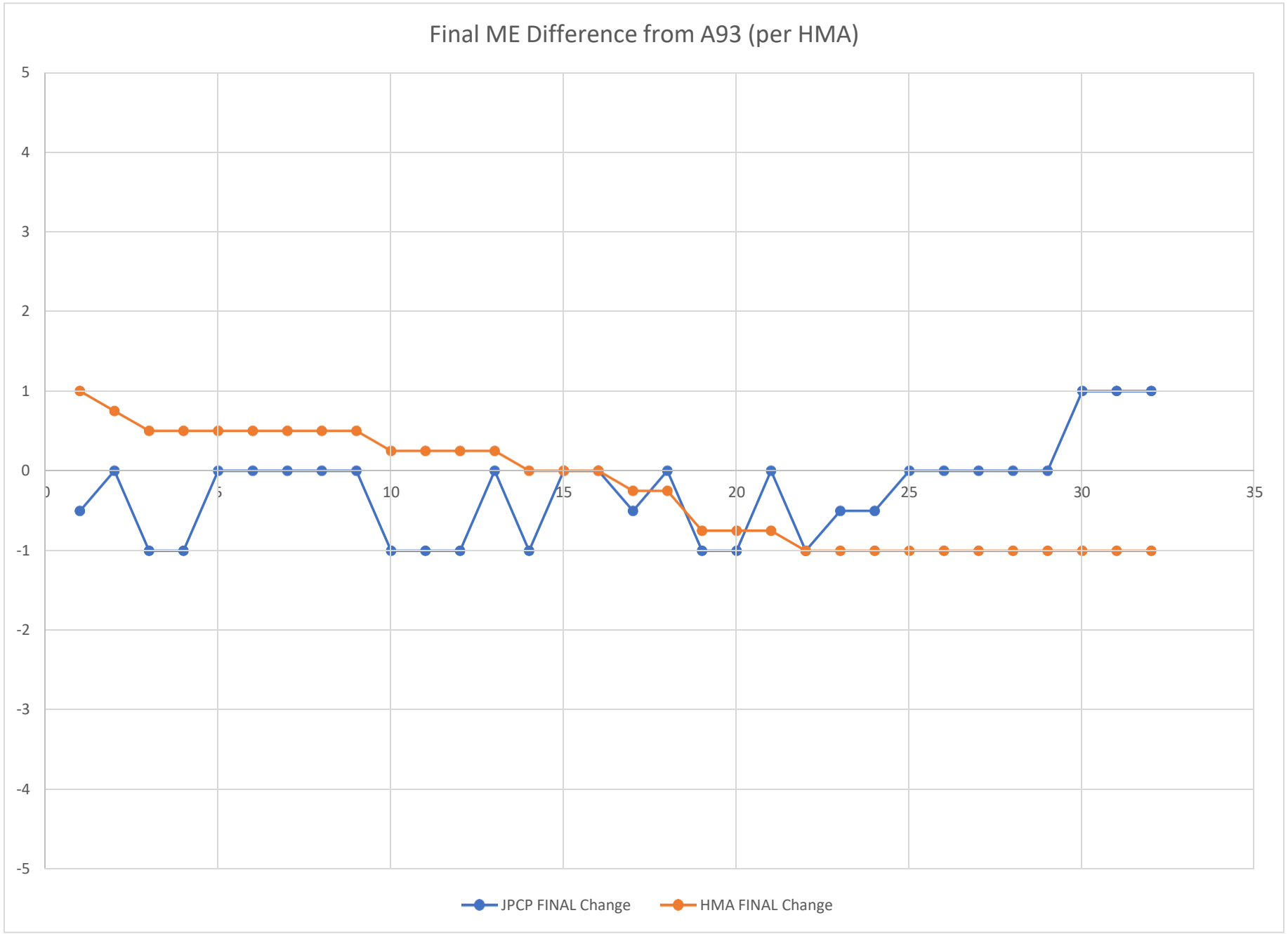
(info compliments of Minnesota Dept of Health https://www.health.state.mn.us/communities/mentalhealth/children)

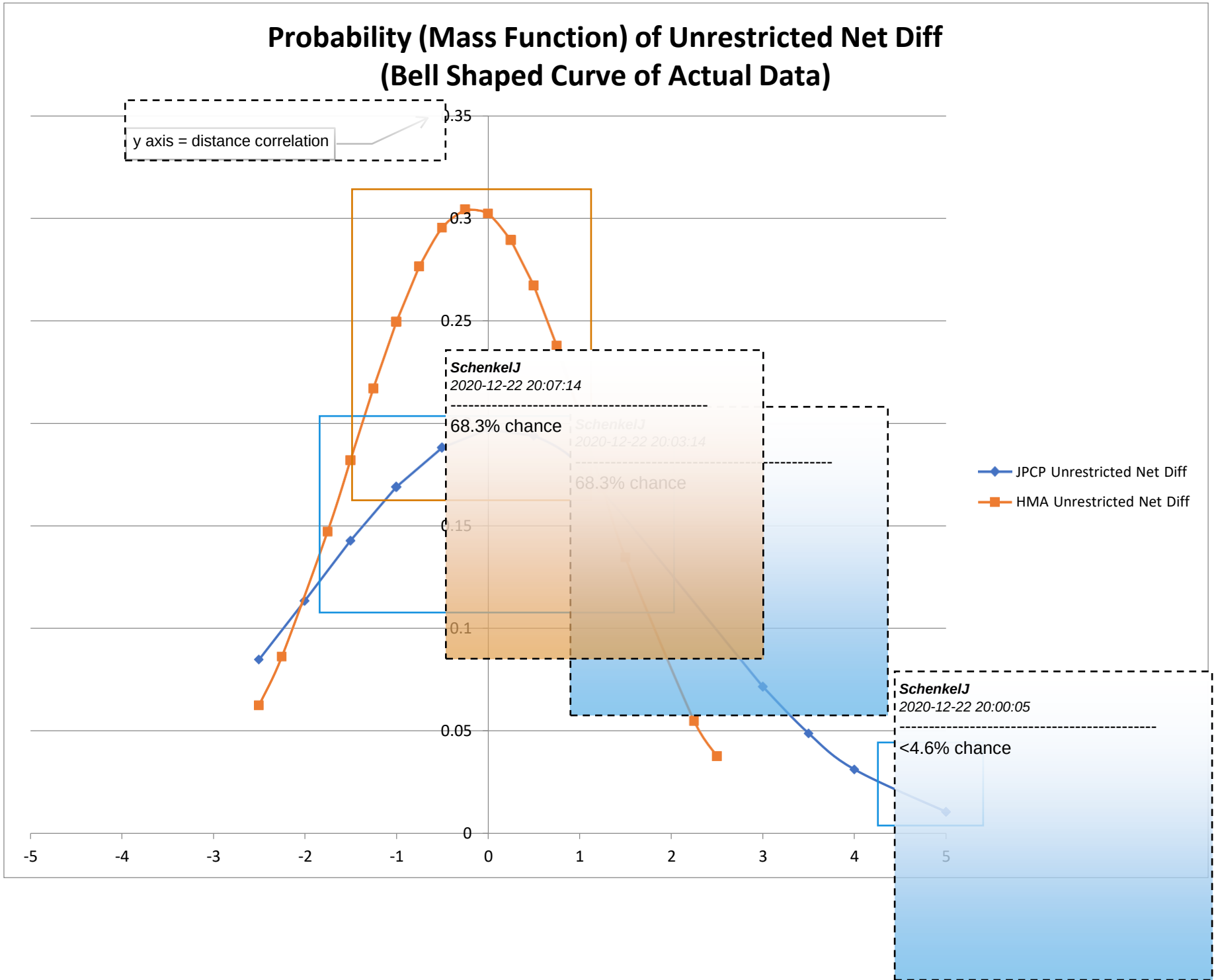
Appendix B

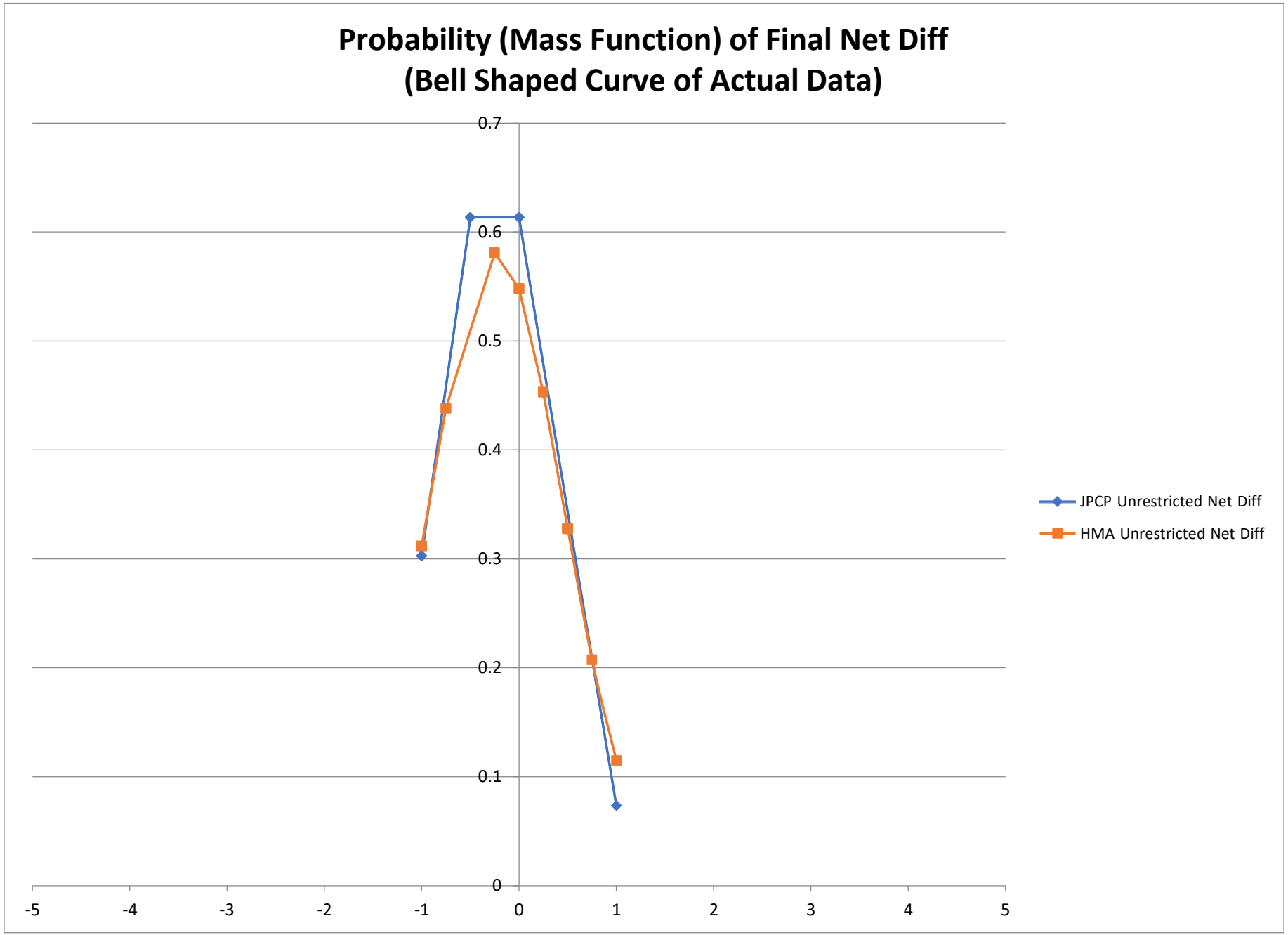

Unrestricted ME Difference from A93 (per JPCP)
5
4
3
2
1
0
-1
-2
-3
-4
-5
10
15
20
25
30
35
JPCP Unrest Change
HMA Unrest Change


Unrestricted ME Difference from A93 (per HMA)
5
4
3
2
1
0
-1
-2
-3
-4
-5
10
15
20
25
30
35
JPCP Unrest Change
HMA Unrest Change


Final ME Difference from A93 (per JPCP)
5
4
3
2
1
0
-1
-2
-3
-4
-5
10
15
20
25
30
35
JPCP FINAL Change
HMA FINAL Change


Final ME Difference from A93 (per HMA)
5
4
3
2
1
0
-1
-2
-3
-4
-5
10
15
20
25
30
35
JPCP FINAL Change
HMA FINAL Change


Probability (Mass Function) of Unrestricted Net Diff
(Bell Shaped Curve of Actual Data)
y axis = distance correlation
0.35
0.3
0.25
0.15
0.1
0.05
0
-5
-4
-3
-2
-1
0
1
2
3
4
5
SchenkelJ
2020-12-22 20:07:14
68.3% chance
SchenkelJ
2020-12-22 20:03:14
68.3% chance
SchenkelJ
2020-12-22 20:00:05
<4.6% chance
JPCP Unrestricted Net Diff
HMA Unrestricted Net Diff


Probability (Mass Function) of Final Net Diff
(Bell Shaped Curve of Actual Data)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-5
-4
-3
-2
-1
0
1
2
3
4
5
JPCP Unrestricted Net Diff
HMA Unrestricted Net Diff