

Perfecting the Fixed Perspective Windows Delay Analysis



Record attendance at AACE Hawaii Section Lunch and Learn August meeting held at Rider Levett Bucknall office. John Jackson from Encore Group served as the luncheon technical paper speaker.

With the variety of Delay Analysis Techniques available to schedule reviewers and analysts, it can be difficult to identify and implement the most reliable and effective way of demonstrating an accurate impact calculation caused by delay in retrospect. The Fixed Perspective Window Delay Analysis ("Analysis") method incorporates the strengths of certain retrospective, observational, and additive methods while minimizing, if not alleviating the weaknesses. It is a 2 stepped process for analyzing delays that incorporates sections of the AACE International's 29R-03 Recommended Practices.

The first step includes the exercise of reviewing a Progress Period Window Looking Forward and Backward as part of the Observational model, Dynamic Logic Observation, and more specifically the Contemporaneous / As-Is and / or Contemporaneous / Split, MIP 3.3 or 3.4 [1]. This approach provides the analyst with an opportunity to review the project's critical path, as memorialized during the project, before and after the delay event from start to finish, including the time frame of when the delay event became critical and when it was finished or when another event took over the critical path. The analysis requires the project baseline schedule and periodic schedule updates that were prepared contemporaneously during the project, and whose network logic may differ to varying degrees from the baseline and from update to update [1]. The second step in the Analysis is incorporates the findings of the first

step into the Modeled approach, specifically the Additive Modeling with the Single Base or Multi-Base, as defined in MIP 3.6 or 3.7, or the "TIA", in order to meet the common contractual requirements for measuring project delays.

Prior to preparation of the Analysis a thorough review of the baseline and monthly updated schedules should be performed with sufficient and appropriate Source Validation Protocols as detailed in the AACE 29R-03 SVP 2.1 – 2.4. Although the AACE RP for Forensic Scheduling states that "Forensic Scheduling is a technical field associated with, but distinct from, planning and scheduling field" [1], experience with planning and schedule is essential in order to avoid misapplication of the enclosed analysis. The analyzer "is assumed to have advanced, hands-on knowledge of all components of CPM analysis and a working experience in a contract claims environment involving delay issues" [1]. A hands-on, in-the-field scheduling experience is also valuable.

The Fixed Perspective Window Analysis in the enclosed Analysis is a detailed and multi-view analysis of a period, or window, of project time using the contemporaneous time frame schedule updates prepared during the course of the project. The analysis is multi-view in that it reviews the fixed window of time from two perspectives, before and after the window of time. The term fixed perspective addresses a common generalization about the windows analysis method where analysts define their own time periods, often subjectively and materially affecting the end results [3]. The

analysis is prepared one window at a time. It assumes the periodic schedule updates are reasonably accurate, and the Source Validation Protocols for baseline schedules and updates have been reviewed.

The Analysis is a two-step approach to preparing the traditional TIA that ensures an accurate and reliable result when calculating delay events. It incorporates the fixed approach of reviewing the contemporaneously prepared schedule updates without modification (MIP 3.3) and incorporating the results of that review into an additive model (MIP 3.7), required in a common TIA contract specification. The review requires that each of the Critical Path Method (CPM) schedules, prepared during the project, be used. The critical path activities are the primary activities analyzed with their associated changes and impacts.

The goal of the Analysis is to isolate only those delays that impacted the critical path and ultimately the completion of the project. Therefore, the Analysis does not attempt to analyze every delay event, but only the critical path delay events as they impacted completion once construction began. The Analysis includes both an as-built critical path analysis to accurately identify and analyze any changes or delays to the critical path, and project completion included in the submitted schedules (MIP3.3). It also includes a contemporaneous analysis of delays (MIP3.7) whereby the delay issues are inserted into the schedule update nearest to the actual start of the delay issues, in order to meet a TIA contract requirement. The methodology includes a detailed review of each project schedule update prepared during the project, analyzing the specific periods between the schedule updates as "progress period windows". The review includes: 1) a review of

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www.aacehawaii.com

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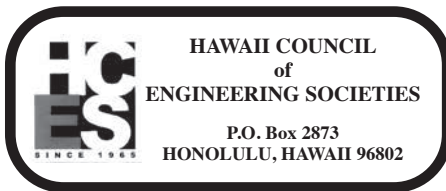
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2020 HCES LIFETIME ACHIEVEMENT AWARD

CALL FOR NOMINATIONS – Deadline: 18 December 2019

The "HCES Lifetime Achievement Award (LTAA)" was established in 1997 by the Hawaii Council of Engineering Societies. The award is provided annually to recognize the lifetime achievements of an outstanding retired engineer and is bestowed upon this individual who has contributed significantly to the development of engineering in the State of Hawaii, and who has made a noteworthy impact to the local engineering community. The eligibility criteria have been revised to allow an individual to be considered who is still involved in the practice of engineering to receive the award. This award will be presented at the HCES Engineers Week Banquet on 22 Feb 2020.

ELIGIBILITY

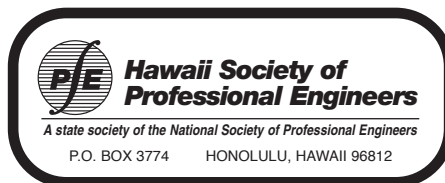
The following criteria shall be applied when considering a candidate for the award:

- The nominee shall be affiliated with an HCES member society as an active member.
- The nominee shall have lived and worked in the State of Hawaii as an engineer or engineering-manager for at least 15 years.
- The nominee shall be 62 years or older at the time of nomination
- The nominee shall have taken retirement from public or private sector employment. The nominee can be currently employed or retired and is serving as a consultant after effective retirement.
- In the case of a nominee who was or is involved with a private company, the nominee shall have legally handed over the company to a successor. However, the nominee may continue to be involved with the company.
- Posthumous awards may be made provided the nominee was an active member of an HCES member society at the time of his/her passing away and fulfilled all the required criteria listed above.
- A waiver of the age and residency requirements may be considered upon request, depending on the "lifetime" achievements of the said individual.

NOMINATION

The following criteria shall apply to the nomination:

- Any person belonging to any HCES member organization may nominate a candidate.



<http://www.hawaiispe.org/>

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sdoi@bowersandkubota.com
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curtbegood@mail.com

NOMINATIONS WANTED

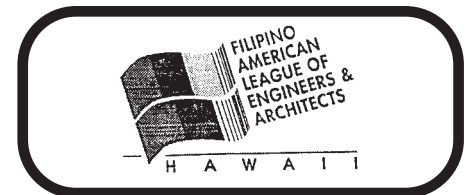
Nominations for the Engineer of the Year candidates will be accepted beginning in November of 2019. Nomination forms will be available on the HCES website at <http://hceshawaii.org/>. The awardee will be presented at the Engineer's Week Banquet on February 22, 2020. Please contact Kurt Kunimine of HSPE at kkunimine@bowersandkubota.com for nomination forms or with any questions. Nominations will be due by December 27, 2019. Mahalo!

- The nomination shall be accompanied by a citation that must effectively highlight, in narrative form, the engineering contributions of the candidate. Special emphasis shall be placed on the nominee's contributions to engineering in Hawaii.
- The nomination shall include a detailed resume of the nominee.
- The nomination shall be submitted with a cover letter addressed to the Chairman of the LTAA Selection Committee
- Multiple nominators may nominate a single nominee. The nominations submitted may be a joint or separate nomination. To be considered valid, each nomination package shall be complete.
- A single nominator may nominate multiple candidates. The nomination for each candidate shall be distinct and complete with all necessary documents.

• If the nominee has been previously nominated, but not selected for this award, he or she may be nominated in subsequent years. The LTAA Selection Committee will select the recipient. Nomination packages shall be *preferably* submitted via email to kyoshida@bchdesign.com or may be mailed to:

Belt Collins Hawaii LLC
2153 North King Street, Suite 200
Honolulu, Hawaii 96819
Attention: Kristen Yoshida

Nominations must be received via email or postmarked prior to 18 December 2019.



P.O. Box 4135, Honolulu, Hawaii 96812

Website: <http://www.falea.org>

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NOMINATIONS WANTED

Nominations for the Young Engineer of the Year candidates will be accepted beginning in 1 November of 2019. Nomination forms will be available on the HCES website at <http://hceshawaii.org/>. The awardee will be presented at the Engineer's Week Banquet On February 22, 2020. Submit completed nomination forms and any questions to FALEA@falea.org. The deadline for nominations is December 27, 2019. Mahalo!

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Holmescoming Returns to the Stan Sheriff Center

By Neal Miyake

After a seven-year location hiatus, Holmescoming returned to the Stan Sheriff Center. On October 11, 2019, the Engineering Alumni Association of University of Hawaii (EAAUH) and the UH College of Engineering held its 12th annual Holmescoming alumni gathering at the Stan Sheriff Center. Over 900 alumni and friends attended the event.

The purpose of Holmescoming is to strengthen and build our engineering community by bringing alumni back to campus and having them reconnect with their fellow alumni, along with faculty, current students, and supporting companies. That's why it's called a "friendraiser" event.

The dry, air conditioned Stan Sheriff Center was the perfect venue for the event, especially due to the inclement weather that day. College Dean Dr. Brennon Morioka congratulated co-chairs Brandon Shima and Dayna Nemoto-Shima for their great planning in anticipation of the rain and mugginess.

The event could not have happened without the generous support of local businesses. Over 115 companies and individual donors provided sponsorship funding.

Students of the Engineering Council of UH (ECUH) provided additional support, from setup/cleanup, food service, and overall logistics. Also, 12 engineering clubs under the ECUH umbrella ran game booths for guests. Finally, the basketball shooting game provided an opportunity for people to know what it feels like to play on the hardwood floor of the arena.

Excellent food was served up by award-winning DK Steak House and Sansei Seafood Restaurant & Sushi Bar, with campus vendor Sodexo taking care of the adult beverages. Performing for everyone's listening pleasure were Bryce & Cass along with BK Espiritu.

It was a great night of fun and fellowship. Even the rain (literally) could not put a damper on the event.



Attendees enjoying Holmescoming in the comfort of the Stan Sheriff arena



Young engineers enjoying good food, drinks and each others company



Martin Nakasone and Song Choi enjoying the DK Kodama food



Attendees enjoying one of the many games



L-R: Brandon Shima (Holmescoming Co-Chair), Dayna Nemoto-Shima (Holmescoming Co-Chair), Michael Magaoay (Dean's Council Chair), Michael Bruno (Provost), Rodney Chong (EAAUH President), Brennon Morioka (College of Engineering Dean).

FALEA, From Page 2

ACCEPTING SCHOLARSHIP APPLICATIONS

FALEA is once again accepting scholarship applications for graduating high school senior or current college students of Filipino ancestry with preference for students who are pursuing post-secondary majors in Science Technology Engineering and Math (STEM). Applications are to be submitted to the FALEA website, FALEA@falea.org no later than November 27, 2019. Scholarship recipients will be notified by December 10, 2019 and presented their award on December 15, 2019 at the annual FALEA Holiday Party.



2019-2020 YMF Officers

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YMF General Meeting

The next YMF general meeting is scheduled for Wednesday, November 6th, 2018 at 6:00 pm at TJ's Sports Bar & Grill. If you are interested in attending and learning more about the various professional, social and service opportunities available through YMF, please contact YMF at ymf.hawaii@gmail.com.

Archery Tag Social

On Sunday, September 15th, 2019, over sixty YMF members and recent University of Hawaii graduates participated in an afternoon Archery Tag competition. Participants were divided into 8 teams that consisted of 6 to 9 members. Teams warmed up with a few friendly games before starting a single elimination bracket tournament to fight for first place. After a few rounds of competitive play, Team "Jelly Peanut Butter" took first place and second place went to "Team 5". Everyone had a blast! Thank you to everyone who came out and supported this event to fundraise for our future events!

Makai Research Pier Cleanup

On Sunday, September 22, six YMF members and thirteen student chapter members volunteered with 808 Cleanups at the Makai Research Pier in Waimanalo. 808 Cleanups works to restore Hawai'i from mauka to makai by organizing events like beach, park, trail & urban cleanups. Our volunteers helped to pick up litter alongside and under the pier and remove debris from underwater. Thank you to our members for coming out to help!

Waulani Judd STEM Night

On September 27th, ASCE YMF participated in the Waulani Judd STEM Night. At the event, 13 volunteers from YMF helped students with activities at the ASCE Hawaii sponsored stations. The ASCE YMF stations featured three activities; a Flood Activity, one featuring Water System Design, and Penny Boats. Through these activities kids were able to test their problem solving skills and learn a little bit about the civil engineering profession.

Thank you to Waulani Judd for inviting YMF to be a part of the event, we hope the students enjoyed the event just as much as we did! And thank you to all our YMF volunteers, we wouldn't be able to do events like these without your help!



Archery Tag Social



Makai Research Pier Cleanup



Waulani Judd STEM Night

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YMF President: Kapiolani Street, P.E.
email: kstreet@ascehawaiiymf.org

EXECUTIVE COMMITTEE MEETING

Last held: Oct 2, 2019

Next meeting: Nov 6, 2019

ASCE HAWAII SECTION DINNER MEETING Program: T.B.D.

Check our website at ascehawaii.org for updates and an email will be sent out to membership with more information.

Speakers: T.B.D.

Date: T.B.D.

Location: T.B.D.

Time: 5:30pm Social Time
6:30pm Dinner
7:00 Program

Menu: Multi-entrée buffet

Cost: \$35.00 for ASCE Members
\$40.00 for Non-Members and Guests
\$20.00 for ASCE Student Chapter Members

COMMITTEE POSITIONS

ASCE Hawaii is looking for volunteers to fill the following committee positions: History & Heritage Chair, Communication Co-Chair, Advocacy Captain, OahuMPO and Student Practitioner Advisor. If you are interested or have questions on any of these positions, please contact President Jason Kage, jkage@ascehawaii.org.

MEMBERSHIP

If you haven't already done so, please renew your ASCE membership. You can renew your membership at www.asce.org.

ASCE JOB LISTINGS

The following job listings are currently posted on the ASCE Hawaii Section website:

- **Booz Allen Hamilton** (Senior Civil Engineer and Wastewater Specialist)
- **City and County of Honolulu** (Civil Engineer V (Geotechnical), Civil Engineer III, V, VII, Mechanical Engineer V)
- **HartCrowser** (Geotechnical Engineers – Principal Level & Project Level)
- **HDR** (Senior Civil Engineers, Senior Federal Project Manager, Project Manager – Transportation Group, Water/Wastewater Engineer)
- **Hirata & Associates** (Geotechnical/Civil Engineer – Project Engineer)
- **Jacobs** (Civil Engineer)
- **Kennedy/Jenks Consultants** (Project Manager, Staff Engineer for Honolulu Office and Staff Engineer for Hawaii Office)
- **Nagamine Okawa Engineers Inc.** (Structural

Engineer)

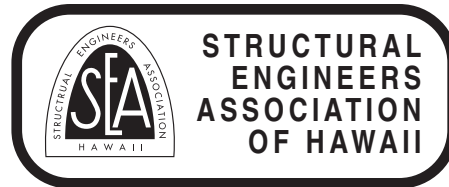
• **PGH Wong** (Change and Claims Manager, Change and Claims Specialist, Civil/Building Inspector, Office Engineer, Scheduler)

• **SSFM** (Civil Engineers V, Structural Engineer IV)

• **US Army Corp of Engineers** (USACOE) (Interdisciplinary Project Manager, GS-12)

• **Zane & Associates, LLC** (Facility Planners)

For further information, please visit <http://www.ascehawaii.org/job-listings.html>.



PO BOX 3348, HONOLULU, HI 96801

Web Page URL <http://www.seaoh.org>

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knakamoto@ssfm.com
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PREVIOUS BOD MEETING

October 2, 2019

General Membership Events

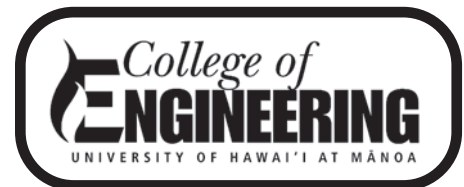
For all events see seaoh.org

The SEA OH Scholarship Golf Tournament will be on November 1st, at Hoakalei Country Club, check in begins at 9:30. There will be food, fun, and prizes. Scholarships will be awarded to selected applicants.

SEA OH Young Member Group

If you are a younger member interested in social activities with your peers, volunteering for outreach and community service, and opportunities for professional development, please contact Kevin Galvez at seaoh.ymg@gmail.com for more information.

Next BOD Meeting on November 6, 2019. For information, contact SEA OH President; Kevin Nakamoto, knakamoto@ssfm.com



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NEXT EXECUTIVE COMMITTEE MEETING

November 13, 2019, 11:30am, CSM Baseyard
 – 99-989 Iwaena St

10th BIENNIAL COLLECTION SYSTEMS CONFERENCE

Date: Wednesday, November 20, 2019

Location: Koolau Ballrooms Kaneohe

Registration is open, go to:

(<http://www.hwea.org/index.php/hweaevents/conference/2019-collection-systems-conference>)

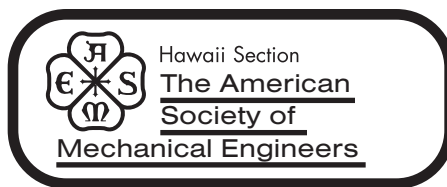
This year, HWEA has teamed with the Western Chapter of the North America Society for Trenchless Technology (WESTT) to provide an exciting joint conference. There is an all-day post-conference training on Trenchless Technology Good Practices Course, Rehabilitation and New Installations 101 (optional, additional fee applies). Thursday, November 21, 2019 at Hyatt Place – Waikiki Beach.

The conference will include a wide variety of topics related to wastewater collection systems and buried infrastructure with an emphasis on: current collection system technologies, assessment, rehabilitation and operation.

Other presentation topics include:

- Collection System Design (including pump stations)
- Trenchless Construction/Rehabilitation and Condition Assessment Methods
- System Operations, Maintenance and Troubleshooting
- Conventional Construction/Rehabilitation Methods
- Collection System Assessment
- Safety Issues
- Regulations/Enforcement
- New Technologies
- Management and Administration of Systems
- Operator Certification

For questions or additional information contact: Jon Nishimura (944-1821, jnishimura@fukunagaengineers.com)



www.asme-hi.com

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derek.sato@hawaiianelectric.com
 HCES Rep: Froilan Garma

NEXT ASME-HAWAII GENERAL MEMBERSHIP MEETING

Date: (Date yet to be determined)

Time: from 5:30 pm to 7:00 pm

Place: Johnson Controls, previous meeting was held at the 550 Paiea Street office.

Agenda: A copy of the agenda will be on the Section website. As usual, all members, students and guests are invited and encouraged to attend our meetings. There are always lots of complimentary refreshments. Please contact Chairman Froilan Garma for directions and for more information, such as parking.

HIGHLIGHTS OF THE SEPTEMBER ASME-HAWAII GENERAL MEMBERSHIP MEETING

Chairman Froilan Garma presided over the September 17, 2019 meeting at Johnson Controls Paiea Street office near the airport. The meeting minutes included the following:

• HCES Report by Froilan Garma: 2020 Engineers Week Banquet duties yet to be assigned by HCES. Meeting was scheduled for September 19.

• Student Section Report by Daryll Suyat: UHM Engineering held their Fall Engineering Showcase on September 20 for student engineering societies to show students, engineering and others, what their group is all about. Goal was to attract interest in engineering majors and for clubs/societies to gain new members. The students' November 2 professional networking event location is not set yet, but they are steering towards Hale Koa.

Students are looking forward to Pearl Harbor info sessions scheduled for October. Officers of the student section are mostly juniors with no repeat officers from last year.

• UHM DME Report by Dr. Sangwoo Shin: Dr. Weilin Qu is the new co-department chair alongside Dr. Lloyd Hihara, as of May 2019 when Dr. Marcello Kobayashi started his sabbatical leave. The new co-chairs' goal is to build a better environment for students and faculty. Focus will be in supporting ASME student section to create better connections with professionals and better student and faculty relations. There has been a slight decrease in ME class size this year, however; Mechanical Engineering remain the largest in the College of Engineering. There are 19 faculty members in the DME helping provide class availability. A course is now available every Friday for students to gain experience in the professional world. They spend about 3 hours learning/working with local companies, such as

Pearl Harbor Naval Shipyard.

• New Business: Tours - First tour is planned for spring 2020, are there are several suggestions such as repeating some of the popular tours of the past. ASME tours are attended by ASME members, the Student Section and UHM DME faculty.

Francis Rhodes Montgomery Design Competition (FRMDC) recap -

Time allotted for teams to present was the same regardless of project size. This format proved to be a good test for team's presentation skills requiring them to clearly layout their project's goal, problems encountered, manufacturing process and achievements. Not requiring every team member to speak greatly improved team potential for a more cohesive, clearer and organized presentation. Judging went smoothly with the weighted points system created by Dr. Zachary Trimble.

ASME-HI Website - The website currently acts as an archive for pictures, FRMDC historical information, and a Hall of Fame

Section. Current ASME Group Operation Guide specifies "no other public website shall be used for official group communications." ASME-HI Section intends to continue maintaining its website for archival purpose.

• Presentation for the Evening: Microfluidic Approach of Enhanced Oil Recovery by Sung Wan Park. Research focuses on modeling fluid flow characteristics between different brine solutions to maximize oil extraction from oil deposits. Manufactured microsystems are utilized to analyze fluid viscosity, flowrates, and sediment extraction under controlled conditions.

KAILUA HIGH SCHOOL CAREER FAIR 2019

Derek Sato will represent ASME at the November 8 career fair held in the Kailua High School gym. This is an annual event and ASME has had a mechanical engineering display at this fair for over 15 years. It has been a great way to promote mechanical engineering, including an education at UHM COE.

2020 MATHCOUNTS COMPETITIONS

It's almost that time again when about 30 middle schools on Oahu try to unseat Washington Middle School in the Oahu Chapter

Competition on February 8, 2020 for first place. Team Washington has placed first consistently that the real battle is for second place. MATHCOUNTS Hawaii is sponsored by the Hawaii Society of

Professional Engineers (HSPE) with Nhut Pham of Bowers and Kubota the main coordinator. ASME Hawaii members have been on the steering committee helping with recruiting proctor and scoring volunteers. The chapter competition is held at Kamehameha Schools and Hawaii MATHCOUNTS needs about a hundred volunteers to proctor, score the competition, besides other duties. The competition starts at about 7:30 a.m. Most volunteers are needed for scoring, and so if you can help score, please contact Ed Chang (543-4227, edmund.chang@hawaiianelectric.com).

**Deadline for
 Wiliki
 is November 15th**

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**2019-2020 ITE Officers**

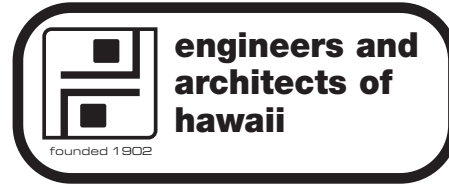
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A Hawaii Section meeting was held on September 25 at the Frank Fasi Municipal Building. At the start of the meeting the committee chairpersons provided updates from the committees. Student Chapter Liaison Michelle Agustin shared details on two upcoming student outreach events. First, a Resume Review Workshop was held on September 30, 2019 at University of Hawaii at Manoa, which was open to all students in the College of Engineering. Second, a STEM event, The Mitey Rice Challenge, will be held on November 9, 2019 and is open to both UH and high school students. Michelle was followed by International Director Cathy Leong who provided new updates on the new election rules and procedures for the Western District. She also reminded everyone that the next joint Western and Mountain District Meeting will be in Honolulu June 28 – July 1, 2020 and that abstracts are currently being accepted.

The committee reports were followed by a presentation from guest speaker Eric Lee Niemeyer, Traffic Operations Engineer for City of Springfield, Oregon. Eric's presentation highlighted the benefits of installing flashing yellow arrows (FYA) at signalized intersections. Eric began his presentation by summarizing previous research, which found that drivers understand the FYA better than the circular green. However, at that time it was believed that the flashing yellow arrow and static yellow arrow needed to be in separate sections. Thus, the 2009 Manual on Uniform Traffic Control Devices (MUTCD) prohibited the use of three (3) section FYA. Research completed in June 2014 found that there was no difference in driver comprehension between a four (4) section or three (3) section FYA arrangement. In August 2014, FHWA issued Interim Approval (IA-17) that allows three (3) section FYA. Eric went on to share the feedback he received after

deploying flashing yellow arrows at signalized intersections. There was a mix of negative and positive comments from the community, but overall the comments were positive. Eric listed the over 30 intersections in Springfield, OR that he converted to FYA. Lastly, Eric identified a potential FYA site on Oahu.

For information on upcoming meetings and events, please email Jasmine Teramae-Kaehuaea at jkaehuaea@atahawaii.com.



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EAH's meeting location is Room 301 in the Topa Tower downtown Honolulu 745 Fort Street. Validated parking is available (enter from Nimitz). Visit eahawaii.org for directions and a map and any Program schedule or meeting location updates.

Meetings are held 2 times per month on Fridays. Meetings start at NOON and have ended PROMPTLY at 1:00 pm for over 110 years.

All are Welcome. Lunch is \$10.00 for Members, \$12.00 for guests and \$5.00 for students. Drinks and refreshments are complimentary. Brown baggers welcome. \$2.00 donation is gratefully appreciated if not having lunch.

Perfecting the Fixed Perspective Windows Delay Analysis, From Page 1

the progress period window looking forward, using the schedule update prior to the progress period window; and 2) a review of the progress period window looking backward, using the schedule update at the end of the progress

period window.

The Advantages of the Fixed Perspective Window Analysis is that it meets all of the Underlying Fundamentals and General Principles laid out in the AACE Recommended Practices for Forensic Scheduling.: 1) It uses CPM Calculations; 2) The concept of Data Date is an integral part of the Analysis; 3) network float is identified and accounted for; 4) Float is based on the appropriate schedule; 5) Sub-Network Float can also be evaluated when needed; 6) the calculation of impacts can be demonstrated in relation to the critical path; and, 7) all available schedules are considered [1]. Preparing an analysis as described herein, where Impacts of potential causes of delay are evaluated within the context of the schedules in effect at the time when the impact or multiple impacts happen [1], increases the accuracy in quantification. In addition, the fixed time periods provide the best as-built of not only project dates and sequences, but an as-built view of the prospective critical path as contemporaneously prepared.

In conclusion, guidelines for preparation of Time Impact Analyses prescribed in many contract specifications align with the MIP 3.7 methodology. The guidelines can be vague and easily manipulated. Therefore, a proper application of a Time Impact Analysis methodology is essential to reach a reliable conclusion. The enclosed method for measuring delays incorporates the strengths and minimizes the weaknesses of common delay analyses by combining an application of MIP 3.3 to MIP 3.7. The combination, as described in the previous paragraphs, will minimize errors and manipulations by identifying the appropriate schedule to use as a basis for the Time Impact Analysis and a reliable duration of the analyzed delay, while meeting the typical contract requirement for preparing a TIA.

References:

1. AACE International, Recommended Practice No. 29R-03, Forensic Schedule Analysis, Morgantown, WV: AACE International, 2011 Revision.
2. Baker, Ken, Presenting Delay Claims: Where is the Logic?, <https://www.lorman.com/resources/presenting-delay-claims-where-is-the-logic-15685>, Lorman Education Services, April 24, 2006.

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