

ENGINEERING APPLICATIONS

DRIVING CDOT FORWARD



FISCAL YEAR 2017

PROFILE & REPORT



How does the Engineering Applications group measure its

impact over the last fiscal year? Our contributions are not measured in fiscal terms, but rather in scope and influence.

We quantify results in three ways: by the number of users we support, by users we train on various technologies, and by the scope and impact our leading edge technology initiatives are having on CDOT to fulfill its vision to be “the best DOT in the country”.

Fiscal Year 2017 was all about driving CDOT forward. Innovation, dedication, and inspiration keep the team aspiring to deliver results for CDOT.

By implementing changes that will benefit CDOT and its stakeholders and the state’s residents, a more agile, connected infrastructure is within reach.

The Engineering Applications team supports a variety of software programs that help manage up to \$1.4 billion in projects annually. From cost estimation to construction management and more, CDOT and its customers use these solutions to manage information throughout the entire contract and construction cycle.

The team also promotes and implements eConstruction initiatives by deploying leading edge technologies designed to advance CDOT’s national ranking and make travel in Colorado safer and more reliable.

Our mission is defined by the following seven pillars of success:

SEVEN PILLARS OF SUCCESS

1. **Customer Support** - provide support for current and future software programs.
2. **Training** - develop training courses for engineering and maintenance applications.
3. **Data Analysis** - fulfill custom reports and provide data analysis.
4. **Project Management** - perform research and implement new technologies.
5. **Partnerships** - facilitate partnerships and collaborations to enhance operations.
6. **Marketing & Communication** - keep internal and external stakeholders apprised of team progress and technology initiatives.
7. **Team Development** - improve teamwork and efficiency to elevate the group’s impact on CDOT’s operations.



Fiscal Year 2017 was a memorable one for the Engineering Applications group. Through innovation, change management and collaboration with other CDOT teams and divisions, the group ended another fiscal year with the launch of its eConstruction Pilot Program and the realization that change is possible within CDOT.

Implementing Innovative Solutions - eConstruction Pilot Program & New Technologies

By identifying new technologies specifically designed for the construction and transportation industries, the group embarked on an eConstruction Pilot Program.

Software applications were chosen for their need, ease of use, integration with CDOT's legacy system, and potential cost savings. Utilizing tablets installed with selected software applications, the eConstruction Pilot Program is expected to transform the inspection, markup of blueprints, and management of projects from paper-based to a paperless, connected environment.

Projects on which to test the applications were earmarked, and select pilot participants and a panel of superusers are recording findings that will be published in *Advancing Innovation at CDOT*, an eConstruction Guide & Pilot Report.

Expanding Our Reach - Marketing and Communications

The group expanded its reach through all five regions with trips, engagement through our monthly newsletter, and specifically through integrated plans, Town Hall Meetings, and venues to support the launch of the eConstruction Pilot Program.

Empowering Users to Succeed - Training

Providing training on the functions of CDOT's AASHTOWare Project components is vital to the efficient and accurate management of construction contracts from start to finish.

The group is continually updating its training courses, content and handout materials, and is in the process of developing eLearning options to supplement the current onsite and region training schedule.

FY 2017 ACHIEVEMENTS



Enhancing Processes & Advocacy - Support

A dedicated team of support analysts responds to daily requests from CDOT management, team members, consultants, and vendors on the functions and navigation of SiteManager. Requests have grown over 150% over the last twelve months.

Delivering Data-Driven Analysis - Gaining Knowledge from Data

Extracting knowledge from all the data CDOT generates is a key initiative of the group's reporting and data analysis functions. This offering was implemented early in FY17, in response to a large number of internal requests. There are currently 21 standard reports available.

Achieving Innovation at Work - Technology Peak

Over the course of FY17, the group program managed the deployment of the Technology Peak trails, and project managed two of the trails: Paperless CDOT (eConstruction and eMaintenance), and Contracting Process Improvements (Bidding Software).

This was accomplished by collaborating with other divisions and units within CDOT.



Engineering Applications is responsible for upgrades and support of these AASHTOWare Project modules: BAMS/DSS, Project Bids, Preconstruction, SiteManager, Cost Estimation, SiteXchange, Project Worksheet, and Decision Support. These solutions drive CDOT’s construction process from start to finish.

AASHTOWare Preconstruction manages project information and automates processes during the early phases of a construction project. To render technical support on the Preconstruction component of AASHTOWare, the Engineering Applications group regularly develops and upgrades its series of user guides and marketing materials.

AASHTOWare SiteManager manages the Construction phase of every project. It tracks, reports, and analyzes material data from contract award through finalization of the construction process.

AASHTOWare SUPPORT

During FY 2017, the team provided AASHTOWare support to a record number of CDOT managers across all divisions and regions, team members, and consultants. To service this increase, the team enlisted the help of three new CDOT cross trainers.



SOFTWARE SUPPORT

The support team also serves as a liaison between various CDOT divisions and OIT by providing essential service and solutions to new software programs, integrations with the legacy system, and functionality.

Expanded outreach and marketing by the team also resulted in significant increases in service requests for program assistance, data analysis, and reporting to support business decisions.

IT PROJECT PRIORITIZATION DASHBOARD

A dynamic dashboard to prioritize IT-related requests was developed late 2016 to help prioritize and track

progress on non-AASHTOWare related support issues. The matrix is calculated by level of complexity and level of impact to operations.

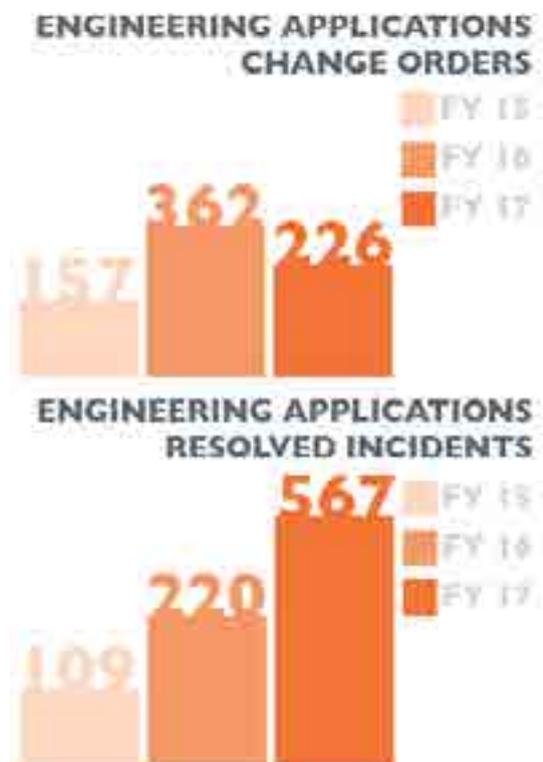
PROJECT “HIDEY”

The team is working with OIT on the cleanup and customization of the user interface in AASHTOWare Preconstruction to improve functionality for design engineers. Project “Hidey” is intended to eliminate (by hiding) unused and/or irrelevant requested information for respective users in a Bidding, Preconstruction, EEMA, and Letting role. Now, users can input information more efficiently due to the customization of their screens.

FISCAL YEAR 2017 - BY THE NUMBERS

Productivity of Software Support for AASHTOWare is measured by volume of Change Orders processed, by volume of Incidents Resolved, and by setup and support for the creation of new accounts. Since we have just started tracking the latter, numbers are not included in this profile and report.

As the graphs illustrate, while the volume of change orders processed has decreased, the resolution of incidents has increased by 150% over FY 2016. We attribute this increase to outreach, interest in data analysis, marketing and communication of the team’s value proposition, and new account users.





The training of AASHTOWare components, specifically SiteManager, is performed over two consecutive days every month at HQ.

Select trainers and team members manage the registration, compilation of materials, and training of CDOT members and consultants on the functionalities, upgrades, and best practices of SiteManager. This includes hands-on learning processes for setting up Daily Work Reports, Change Orders, Project Estimates, and essential functions for approval by Resident Engineers on CDOT highway projects.

Other courses have been designed by the team to be performed online or in regions where travel to HQ can be difficult, especially during the construction season.

AASHTOWARE TRAINING

Monthly SiteManager training sessions are held at HQ and the team also develops User Guides and other job aids to help attendees gain proficiency in the program.

Training Needs Assessment: The group applies learnings from its Needs Assessment Survey and rating system as the basis for its training programs. This survey will be updated again in FY 2018.

New Construction Project Financials eLearning Course:

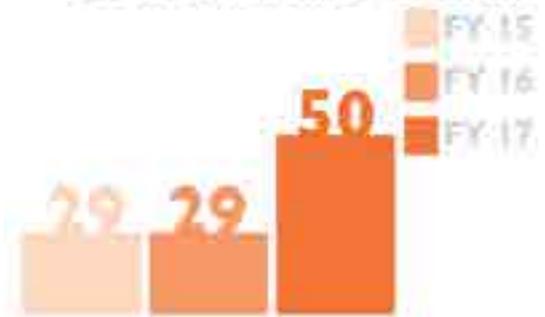
Launched in March 2017, this new interactive course provides step by step tutorials on the Project Financials Statement, more commonly known as Form 65. It is designed to help users identify, interpret and understand the financial status of a project. It is available through the SAP Portal/Employee Self Service Tab.

New eLearning Videos: The group is currently developing a series of interactive training videos on all components of SiteManager. These include Daily Work Reports, Diaries, Progress Estimates, Materials Stockpiling, Contract Master Lists, and Change Orders.

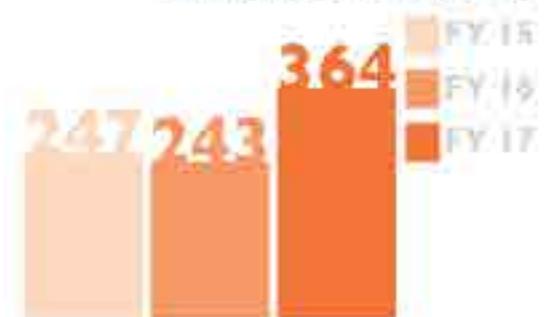
RE Training: This special course was designed for Resident Engineers in the regions to teach other Resident Engineers in an approval role within SiteManager. John Hall, an RE from Region 2, produced a short [video](#) to help REs navigate SiteManager which has been useful.

Train the Trainer: Team members traveled to the regions to initiate a Train the Trainer program during FY17.

ENGINEERING APPLICATIONS TOTAL TRAINING COURSES



ENGINEERING APPLICATIONS TRAINING ATTENDEES



Designed as a refresher for trainers in the regions, it was expanded in an effort to enlist new trainers by offering them in-region training by their peers.

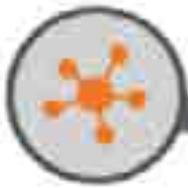
Region Trainers: During FY17, the Engineering Applications team enlisted volunteers from all five regions as superusers to teach the SiteManager class in their regions. Their proficiency and certification has enabled team members to avoid requisite travel to HQ to fulfill their SiteManager training requirements. Superusers are also providing support for eConstruction pilot testers.

Training Materials & User Guides: A new condensed User Guide for Project Engineers was released earlier this fiscal year. This is an update and supplement to the original Field Construction Student Guide, a 175-page document.

FISCAL YEAR 2017 - BY THE NUMBERS

In the training segment, the Engineering Applications group maintained the same number and attendance at onsite SiteManager training courses, but also added other training courses (see left) and regional training.

Courses offered increased by 72%, while attendance saw a boost of 50% over FY 2016.



CDOT relies upon SAP software and its legacy system, AASHTOWare to run its highway construction operations. This is an Enterprise Data Warehouse, where data is stored, retrieved, analyzed, and utilized to meet the agency's various needs.

New technologies and programs are either integrated with or synchronized to function with AASHTOWare.

REPORT & DATA ANALYSIS REQUEST FORM

To assist users in gathering data to support business decisions, the team originated an internal data reporting and analysis service in early FY17.

The [Report & Data Analysis Request Form](#) is available on the intranet to CDOT team members. Over 21 standard report and data analysis options are available, as well as custom reports. The team also provides this service directly to consultants.

Over the past twelve months, the AASHTOWare Support team has assisted over 400 CDOT team members and consultants with requests for reports and data analysis.

Since inception, the list of available reports and analysis has expanded to include, comparing contractor bids to engineering estimates, and analyzing change orders and force account incentives.

AASHTOWARE DATA ANALYSIS

The data and information that CDOT employees have been entering into SiteManager year over year provides the team with the ability to not only ensure that contractors are being paid appropriately and in a timely manner, but also provides the data necessary to support critical business decisions.

Analysis enables the group's analysts to seek out trends and opportunities for operational improvement. To date, data has been analyzed related to Change Orders, Force Account Incentives, Estimated vs. Bid Project costs, as well as data provided by third parties.

Analysis of Change Orders, for example, included determining which vendors had the highest number of change orders as well as the average number of change orders per project. Force Account analysis focused on Concrete, Asphalt, and Roadway Smoothness incentives by region.

DATA DRIVEN ANALYSIS & PILOT REPORT

For the successful pilot and eventual adoption of eConstruction processes at CDOT, the team established benchmarking, analysis, and measuring processes from day one of the pilot program. Data-driven analysis is a critical component to assessing the viability of eConstruction at CDOT.

In order to provide the analysis, a variety of hardware and software evaluation forms were created. These smartforms are available on [SharePoint](#). Some forms are designed for weekly entries while others will document overall takeaways.

GALVANIZE/CDOT DATA PARTNERSHIPS

In late FY17, the team developed an opportunity statement and proposal for solutions to improve the project estimation process. This was given to a group called Galvanize that is comprised of data scientists, professors, and students majoring in Data Science to garner solutions.

Headed by data scientist Douglas Shuster, the group presented an [MVP](#) (Minimal Viable Product) that utilized algorithms for data analytic and modeling to develop an automated highway construction estimation process.

The model encompasses machine learning solutions that provide pricing strategies based on both historical and market data and information.





The Engineering Applications group has taken steps to manage innovation by seeking out leading eConstruction technologies to test in the field and front office. To get there, the team implemented a change management strategy, developed a strategic and integrated implementation plan, and is testing the applications on CDOT projects across all five regions.

METHODOLOGY

While change is difficult, it is also necessary. Necessary because to keep up with changes in technology that impact lives, old methods must be replaced or updated. As ambassadors of CDOT's Technology Peak and thus proponents of change, the group ascribes to this methodology: *To change mindsets requires improved skillsets that can only be realized with the right toolsets.*

eCONSTRUCTION PILOT PROGRAM

eConstruction is changing the face of CDOT - from the way it does business to the way projects are executed, managed, and finalized. This change is embodied in the eConstruction Pilot Program which kicked off in June 2017. The research, planning, and development of this groundbreaking program was only made possible through the hard work, innovation, and dedication of CDOT team members, vendors, and all stakeholders.

The Engineering Applications team is very excited about this program. Not only will it demonstrate CDOT's ability to conform to a changing construction and transportation environment, it portends a new era for CDOT - one that is agile, connected, and responsive to the needs of a changing Colorado.

eCONSTRUCTION SURVEY & RESULTS

Prior to the launch of the pilot program, the group designed and distributed a research survey to all CDOT team members to gather feedback on their understanding and perception of the eConstruction process. The [results](#) may be surprising to some readers.

eCONSTRUCTION INTEGRATED IMPLEMENTATION PLAN

The team also created an integrated [eConstruction Implementation Plan](#) to guide the eConstruction team through all aspects of the pilot program. The plan also serves as a reference for best practices and summary of processes.



PILOT PROGRAM - SOFTWARE APPLICATIONS & DEVICES

- ◆ **HeadLight by Pavia Systems** - HeadLight is a project inspection application that replaces the paper-based field inspection process. Integration with SiteManager is underway.
- ◆ **PlanGrid** - With the PlanGrid Mobile Construction App, users can electronically markup, update, and alter blueprints in real time. Users are currently training on its functions.
- ◆ **Bluebeam** - Bluebeam Revu enables users to create, edit, markup, and collaborate in PDF formatted documents across a project's entire lifecycle. Field use is being performed.
- ◆ **SharePoint SmartForms** - The group's Region 3 associates have created a variety of SmartForms in SharePoint that emulate existing forms such as Forms 7, 10, 103, 105, 266, 279, 280, and 580.
- ◆ **Mobile Devices** - The group invested significant time in researching and comparing various mobile devices for cost, efficiency, durability, and user-friendliness. A combination of iOS, Android and Windows tablets were selected.

eCONSTRUCTION GUIDE & PILOT REPORT

An eConstruction Guide & Report entitled, *Advancing Innovation at CDOT*, is being developed to document the benefits of integrated mobility and eConstruction to the state's infrastructure. It will also contain results from the pilot program.



NEW CONSTRUCTION & MATERIALS SOFTWARE

Early in FY17, foreseeing the potential to be proactive by improving the inspection process and potentially look for solutions to replace SiteManager that has been in production since 1999, the team researched options and available solutions to meet CDOT's future needs. This included gathering an initial set of requirements, compiling an analysis of options, and organizing the presentation of high level demos to stakeholders at HQ.

At the time of this publication, all indications were that CDOT will continue to use SiteManager for the foreseeable future. Should this change, the research will be readily available to start the conversation.

NEW BIDDING SOFTWARE RESEARCH

Increased contractor costs and the need for a new, consolidated bidding solution to meet CDOT's growing needs led the group to initiate and manage in-depth research on the subject during the latter part of FY17. This included:

- ◆ Performing an analysis of available solutions
- ◆ Documenting current bidding process flow
- ◆ Researching software in use by other DOTs
- ◆ Compiling a list of business requirements
- ◆ Facilitating high-level demos, and
- ◆ Developing an overview to communicate the status to all stakeholders

The goal is to consolidate bidding with Procurement, Professional Services and Highway Construction, and also to provide contractors with access to free plan sets.

NEW TECHNOLOGY RESEARCH

The emergence of new technologies for the transportation and construction industries, as well as applications suitable for piloting are researched and documented by the team. This documentation is provided in comparative (table) and article formats. All research, articles and white papers are published on the [intranet](#). Recent examples include:

- **eConstruction Technology:** [eConstruction](#) comprises software programs that enable the inspection, management, documentation, and sharing of information from the field to the front office.
- **Solar Roads:** These [roads](#) of the future are powered by solar panels made with tempered glass. The idea is to collect solar energy which hits roadway surfaces but is currently not being utilized.
- **Self Cleaning Culverts:** CDOT is exploring the deployment of [self-cleaning culvert](#) methods and technology to mitigate sedimentation and reduce the cost of cleanup.
- **Dynamic Lane Marking:** This refers to the temporary delineation of [lane configuration](#) in busy corridors to manage congestion.
- **Comparative Research on Technology at DOTs:** A comprehensive [tabulation](#) of technology in use or in testing at all DOTs was performed by the team late in the fiscal year. This research helps the team in their market analysis and strategic planning processes.

eTicketing Software

The introduction of [eTicketing](#) to the construction and transportation sectors of industry is having a positive impact on both efficiency and cost of operations. eTicketing refers to the replacement of a paper load out process with automated ticketing.

CDOT manually collects over 137,000 asphalt and 21,000 concrete tickets annually. The team has researched various technologies for potential testing in the field and is setting up high level demos.

Aerial Optik Imaging

Aerial Optik's high resolution imaging capabilities exceed those currently in use and CDOT is also considering this company's autonomous UAS for bridge inspections and other applications.



UAS or Unmanned Aircraft systems, also known as drones, are increasingly being deployed by DOTs to perform site inspections, manage traffic, and mitigate rock fall and other natural hazards.



The Technology Peak is one of CDOT's Three Peaks Initiatives for success. Its vision is to deploy leading edge technology to make Colorado roads safer and more reliable for the driving public.

Lekshmy Sankar serves as an Ascent Leader to provide updates to the EMT and division heads, and communicate them to CDOT members and stakeholders.

The group has been pushing the initiatives, creating presentations, writing articles, and researching technologies to support CDOT's Three Peaks initiative and vision to 'deploy leading edge technology to make Colorado roads safer and more reliable'.

ENGAGEMENT & DEPLOYMENT

In November 2016, the group presented a comprehensive strategy and timeline to stakeholders to ensure the successful implementation of the trails in readiness for the 2017 Leadership Forum.

While effective, the group is trying to take a more proactive stance and communicate effectively to achieve the goals set forth in late 2016 and engage all stakeholders.

PUSHING THE INITIATIVE

To inform, educate, and update stakeholders on the technology peak's vision, purpose and potential benefit to CDOT, the group published a [magazine](#) and developed a [website](#) in early 2017. A [video](#) was also produced to illustrate the initiative.

[Articles](#) on each trail have also been published and posted. These were regularly highlighted in the group's monthly newsletter.

TECHNOLOGY PEAK COMMUNICATION STRATEGY

The goal of the Technology Peak Communication strategy is to improve communication, visibility, and understanding of the attributes and benefits of the Technology Peak initiatives to CDOT and the state's residents.

The [strategy](#) includes:

- ◆ Monthly Tech Peak Meetings
- ◆ Meetings with key stakeholders
- ◆ Monthly dashboards showing progress

INTERNAL COMMUNICATION INITIATIVES

The group has established a four-part approach that includes weekly, monthly, quarterly, and yearend initiatives to internal stakeholders.

- ◆ To support *weekly* communication, a summary dashboard has been created that will consist of a progress scale.
- ◆ The website will be updated *monthly* with progress statements, a monthly video blog, and a dedicated eNewsletter.
- ◆ *Quarterly* Engagement Sessions will be held to engage stakeholders. In addition, quarterly updates will be on Bhatt Chat.
- ◆ A Fiscal *Yearend* briefing will be provided as a video blog/presentation as well as a Technology Peak accomplishment overview will be distributed to all stakeholders.

EXTERNAL COMMUNICATION INITIATIVES

To position CDOT as a DOT that has advanced its technology usage and is a valuable resource to the community, an external communication strategy has been developed. This includes:

- ◆ An educational webinar on Technology in Transportation for distribution through AASHTO to reach other DOTs
- ◆ A YouTube sub-channel to "CDOTMedia" for field services, PSAs, technology news, etc.
- ◆ A Technology Advancements subpage on Facebook (similar to Division of Aeronautics and the Grand Ave Bridge Project)
- ◆ Presentations at government conferences
- ◆ Work with business publications and publish white papers

LEADERSHIP GO

As part of the theme for last year's Leadership Forum, the Engineering Applications team deployed a Leadership Go game to engage attendees. The game used an app called Place.com to place items around the venue for attendees to find and receive prizes.



PITCH - IT GOVERNANCE

Formerly known as ITMT, PITCH or Providing Information Technology Concepts Help Team, is managed by the group to set IT governance within CDOT. Prior to the rebranding, the team performed a survey, created a website, engaged stakeholders, and created a team. PITCH's functions include:

- ◆ Solving CDOT business needs with appropriate IT solutions
- ◆ Prioritizing and aligning IT-related business needs with strategic direction and budgetary constraints
- ◆ Optimizing the function and maintenance of IT solutions while meeting all CDOT's needs

AASHTO COMMITTEES

Lekshmy Sankar represents CDOT at AASHTO committee meetings on a monthly basis and is also an active board member of the AASHTO IT Subcommittee. She serves as a liaison between CDOT and other DOTs and the Federal Government on technology within transportation.

NHTSA V2V STANDARDS

In late 2016, the team was invited to comment on the NHTSA's proposed new Federal Motor Vehicle Safety Standards Rule. This will require all new light vehicles to be vehicle-to-vehicle (V2V) capable, believing it will enhance safety.

The proposal elicited comments from auto manufacturers, technology providers, and governmental agencies such as CDOT. Concerns about standardized criteria and spectrum for DSRC, testing of other wireless technologies, and a realistic timeline for implementation are forthcoming.

FHWA EDC 3 & 4

The group is the FHWA point of contact and champion of eConstruction for CDOT. Team members compile quarterly reports, attend annual meetings, and send reports to FHWA to aid in comparing CDOT's progress to other states.

REGION OUTREACH

The team conducts outreach, trains users on the use of CDOT's software program, and visits the regions on a regular basis to make presentations and ensure technology questions are being addressed at all levels.

PEER TO PEER EXCHANGES

Recent exchanges with Missouri, Florida, Iowa, Idaho and Michigan DOTs on eConstruction processes, solar roadways and self-cleaning culverts yielded beneficial new information. The team plans to share findings from the eConstruction Pilot Program with all DOTs.

DIVISION OF PROJECT SUPPORT

Engineering Contracts: The team has been working with Unit members on two key initiatives. Late 2016 members developed a new [Salesforce Consultant User Guide](#) which is designed to qualify professional services consultants. The group is also managing the research and implementation of new Contracting Management Software, including governance for SRM updates related to engineering contracts.

DIVISION OF HIGHWAY MAINTENANCE

During FY 2017, Engineering Applications teamed up with the Maintenance Division to develop a compre-



hensive Maintenance IT Initiatives Road Map. This outlined a series of processes and new technologies aimed at automation, and to increase operational efficiencies and reduce cost through 2018.

Fuel Controls Project: To support paperless initiatives, the group initiated testing the integration of the Zonar (AVL) system on heavy fleet vehicles and Verizon AVL system on light fleet vehicles with data from CDOT's new fleet fuel card, Voyager earlier this year. Once complete, the new processes will eliminate paper fuel receipts while ensuring proper documentation for auditing and tracking.

Zform: The Zonar ZForm App enables the exchange amount of winter products and weather data to Ground Traffic Control. With our help, it was integrated and synced with MDSS before the winter season for real-time forecast and treatment recommendations.



Research, positioning, and attainable outcomes are paramount to the Engineering Applications' team's success over the last fiscal year.

Our Marketing Plan is fluid, and our reach is wider than ever as we strive to make technology and software programs user-friendly, accessible, easy to implement, and responsive to CDOT's needs.

MARKET RESEARCH

◆ CUSTOMER SURVEYS & ASSESSMENTS

The team creates and disseminates market research, marketing, online research, and customer satisfaction surveys to CDOT stakeholders on issues such as going paperless, what eConstruction means, training needs assessments, and the value of ITMT. Results are published on the intranet.

MARKET STRATEGIES

◆ NETWORKING/OUTREACH

Tech Minute with Lekshmy/CDOT Weekly News - Lekshmy Sankar, team manager, posts useful and innovative technology news and tips on the intranet and in a weekly newsletter.

Change Incentives & Advice - Disruption to an established norm is hard, especially for a governmental agency like CDOT. While the team has developed and presented a [framework](#) of change management, updates and anecdotal advice is published periodically via newsletter.

◆ DIRECT MARKETING

NEWSLETTERS - The team pioneered the publication of a monthly newsletter in 2016 and it has been extremely well received. Dedicated to technology and innovation, the content is focused on news within the unit, and technologies under research and development. The subscriber list has grown by 285% in little more than 11 months. Back issues are available on the [intranet](#).

◆ **ARTICLES** - Members of the team write articles and white papers to keep CDOT apprised of current and future technologies. These [include](#) new programs as part of the eConstruction and Technology Peak initiatives, and others that support automation.

◆ PUBLICITY & SOCIAL MEDIA (LINKEDIN)

The team has joined HR by furnishing articles of interest to reach external customers.

◆ CONFERENCES & PRESENTATIONS

The team has been a frequent guest speaker at iHEEP, CGAT, PUG, TEA, AASHTO, TRB/CIO, and tech summit conferences on technology and innovation. We have presented on change management in public agencies, managing innovation, and eConstruction.

◆ TOWN HALL MEETINGS

The group started a quarterly Town Hall Meeting in January 2017 to offer CDOT team members an opportunity to ask questions and discuss technological challenges in an informal setting. Most recently, the group hosted a first of its kind [LIVE Town Hall](#) at CDOT HQ.

◆ WEBSITES

Besides upgrading the Engineering Applications' external and internal websites, the team developed sites for [PITCH](#), the [Technology Peak](#) and [eConstruction](#) and provided design and content for the Business Center site.

GRANT APPLICATIONS & AWARDS

During FY17, the team reviewed a number of grant opportunities and applied for funding from:

AID Grant - for eConstruction implementation and integration (HeadLight and PlanGrid)

T2 Grant Applications

- ◆ Pilot of Primavera's Risk Analysis software
- ◆ Pavia/HeadLight integration with SiteManager
- ◆ Pilot of PlanGrid

STIC Grant Applications

- ◆ Pilot an eTicketing solution (Fleetwatcher)
- ◆ Mobile Field Inspection Application (Headlight) integration with B2GNow
- ◆ Pilot of Primavera's Risk Analysis software

AWARD PROGRAM NOMINATIONS

- ◆ **ITS WORLD CONGRESS** - The team has been selected to present on *Disruption - Managing Innovation* at the 2017 Congress in Montreal.



Engineering Applications is comprised of two areas: Support and Training and New Technology Initiatives. Everything the group has achieved in FY17 is a testament to the hard work, dedication, and innovative spirit of its amazing team members.

Lekshmy Sankar - Manager



In little over two years, Lekshmy has upgraded, expanded, and promoted technology and process change within CDOT, and is the driving force behind new technology initiatives. Besides managing the group, Lekshmy serves on IT committees and is a frequent speaker on change management and managing innovation at industry events nationwide.

Erin Evans - Senior Analyst



Erin oversees support for all components of AASHTOWare Project Preconstruction and Site Manager. She has played an integral role in the creation of training courses, user guides, and the implementation of Project “Hidey” and bucket billing.

Jane Morrison - Software Specialist



Jane brings three decades of software development and executive management experience to the team. She is the designer of our implementation plans and user testing processes. Jane also develops website content, performs data analysis, and contributes to the monthly newsletter.

Jen Van Rensburg - Communication Guru



Jen is a senior copywriter and content specialist. She provides conceptual direction and is the developer and editor of the group’s marketing and communications initiatives, including the monthly newsletter, technology articles, marketing materials and special publications.

Lynn McEwen - AASHTOWare Support



Lynn is cross training and brings over 15 years of experience in Preconstruction and SiteManager to the group. She was most recently with the Division of Highway Maintenance.

Allison Stanton - AASHTOWare Support

Allison is cross training with the group on AASHTOWare Support. She has been with CDOT for 18 years and has been Program Assistant for Central Program projects out of the Region 1 office for seven years.



Victoria Byler - eConstruction Support

Victoria is cross training with the group on eConstruction initiatives and testing of software applications for the eConstruction Pilot Program. She works in Region 1’s CRL office guiding contractors through the compliance process.



Jacob Rivera - Design Engineer Support

Jacob Rivera is a Professional Engineer and Project Manager in CDOT Region 3 Program East, located at the Eagle Residency. He has worked for CDOT for 5 years managing and designing projects in the mountains where he grew up. Jacob provides feedback on design engineer applications.



Sarah Tunget - eConstruction Support

Sarah has been a Technician III for the Grand Junction Residency since 2014 where she built an Access database system for CDOT Region 3 Environmental. She is developing the Share-Point SmartForms component for the Pilot Program.



Joanie Lyons - Marketing & New Technology Intern

Joanie joined the team in June 2017 to intern on various technology projects. She graduated from LSU and is pursuing a Masters of Science in Urban Development and Management in the Netherlands this fall.



Connor Roberts - Software & New Technology Intern

Connor is a Computer Science major at CU, Denver and is interning with the group on various IT projects and initiatives. He is also performing research on new technologies and applications for field inspection and maintenance.

