



# Training for the Public Works Professional

2019 Michigan Winter Operations Conference

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# INDIANA LTAP

- Training/workshops/conferences
- Asset management
- Hazard elimination program for existing roads and streets (HELPERS)
- Local road research
- Road scholar program
- Equipment loan program



# OBJECTIVES FOR TODAY

- Why public works training programs should be a high priority
- What resources are available
- Understand the difference between training and learning
- How to develop a learning plan
- Action items to take with you



# WHAT HAS CHANGED?

## WHY IS TRAINING A PRIORITY TODAY

ADJUSTING TO THE PASSAGE OF TIME, I THINK, IS A KEY TO SUCCESS AND TO LIFE:  
JUST BEING ABLE TO ROLL WITH THE PUNCHES

*DOLLY PARTON*





# CHANGES IN THE WORKFORCE

Are public works departments getting grayer or younger?

Where are replacements coming from?

- Military
- Manufacturing
- Retail Sales
- College graduates
- Other?



## Name That Generation Quiz

1. Born 1946 to 1964?

*Baby Boomer Generation*

2. Born 1981 to 1997?

*Millennial Generation*

3. Born before 1928?

*Greatest Generation*

4. Born 1965 to 1980?

*Generation X*

5. Born 1928 to 1945?

*Silent Generation*



## Generation Facts

1. Do you know what a Xennial  
(Zen E al) is?

*Generation born between the  
Generation X and Millennials*

2. What is the lost generation?

*1880 and 1900*

3. Ever heard of Generation Z

*Born after 1997*

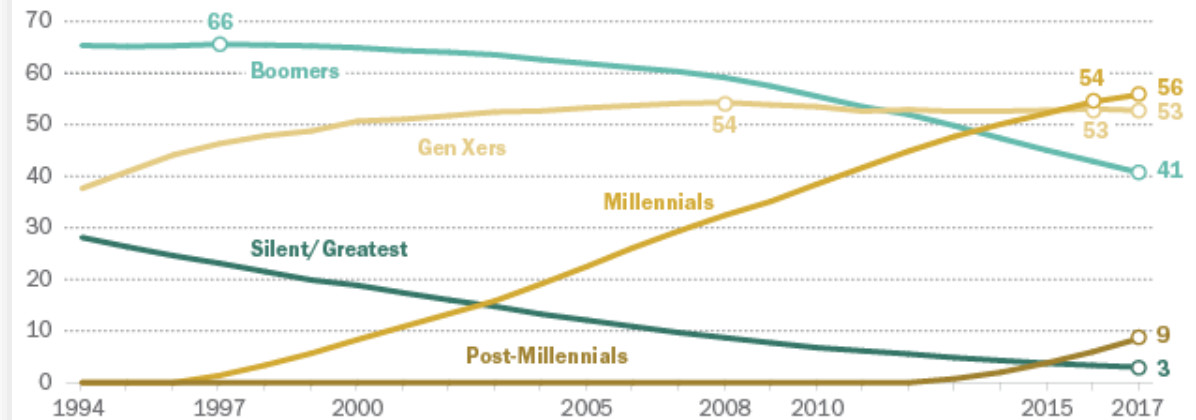
*Good News - They just entered our  
workforce...*



# CHANGES IN THE WORKFORCE

## Millennials became the largest generation in the labor force in 2016

U.S. labor force, in millions



Note: Labor force includes those ages 16 and older who are working or looking for work. Annual averages shown.  
Source: Pew Research Center analysis of monthly 1994-2017 Current Population Survey (IPUMS).

PEW RESEARCH CENTER





# DEMAND FOR JOB SKILLS AND PREPARATION

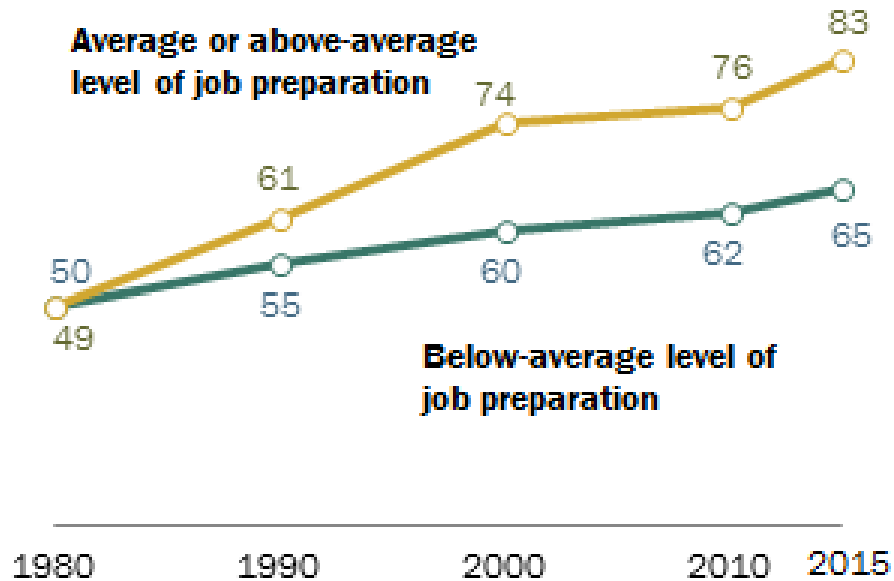
Skills needed in the workplace and preparation required to fulfill a job have changed over time.

- Using technology to substitute for manual demands
- Jobs requiring social skills, communications or management skills, increased 83% from 1980 to 2015
- Jobs requiring higher levels of analytical skills, critical thinking and computer use, increased 77%



## Employment is rising faster in occupations requiring higher levels of preparation

*Number employed, in millions*



Note: Based on employed civilians ages 16 and older. The job preparation level is based on a scale of one (little or no education/experience/training) to five (extensive education/experience/training).

Source: Pew Research Center analysis of O\*NET and monthly Current Population Survey data (IPUMS).

"The State of American Jobs"

PEW RESEARCH CENTER

# DEMAND FOR JOB SKILLS AND PREPARATION

- We don't have time to hire someone and "show them the ropes"
- Proper training is needed to close that gap
- We use new terms like: onboarding, skills assessment testing, exit interviews
- Public Works is just now catching up with these concepts
- It is difficult to get additional funding for training but we must in order to keep up



# DEMAND FOR JOB SKILLS AND PREPARATION

What type of changes have you seen over your career in snow fighting?

- Electronic plow and spreader controls
- (AVL systems) (GIS systems)
- Onboard computer control systems, ECM, PCM, TIPM
- Anti-icing/pre-wetting
- Weather forecasting/meteorology
- Better understanding of deicing chemicals





# DEMAND FOR JOB SKILLS AND PREPARATION

## On-Time Training/Learning

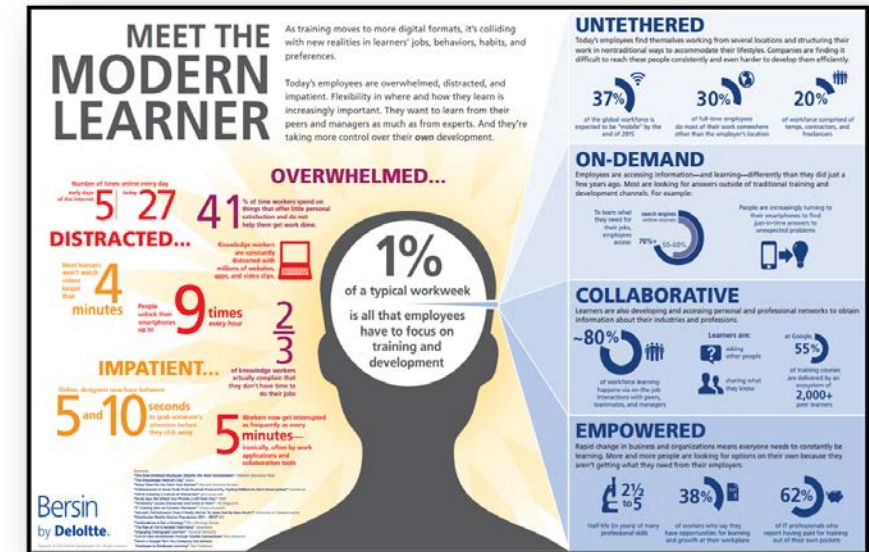
We need to enable learning the way it  
REALLY occurs in the workplace

- Fast paced – quick – direct
- No time to wait for the next workshop
- Need access to training 24/7
- We need verification of successful completion

# TODAY'S CHALLENGING WORK ENVIRONMENT

## WHAT DISTRACTS US

- People unlock their smartphones 9 times every hour
- Uses 2+ devices a day
- Workers spend 41% of their time on things that do not help them get work done
- Most learners will not watch a video longer than 4 minutes
- Workers are interrupted every 5 minutes – ironically by the same work application that were designed to help



# TODAY'S CHALLENGING WORK ENVIRONMENT

## WHAT DISTRACTS US

The average worker spends 52% of each workday on three unnecessary tasks

1. Unnecessary Commuting (13 percent)
2. Unnecessary Meetings (16 percent)
3. Unnecessary Emails (23 percent)

*By Geoffrey James Contributing editor, Inc.com*

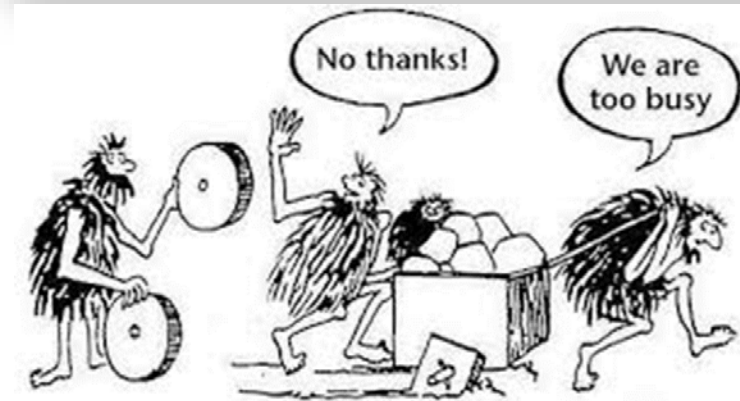




# TODAY'S CHALLENGING WORK ENVIRONMENT

## INCREASING DEMAND ON OUR TIME

- Increased level of service
- Increased expectation of how quickly that service is delivered
- Same or less staffing
- Older/newer equipment issues
- Less time/funding available for training/learning
- Less time for changing the culture of  
“The same old thinking = The same old results”





# LEARNING RESOURCES AVAILABLE

HOW TO MAKE THE MOST OUT OF AVAILABLE TRAINING

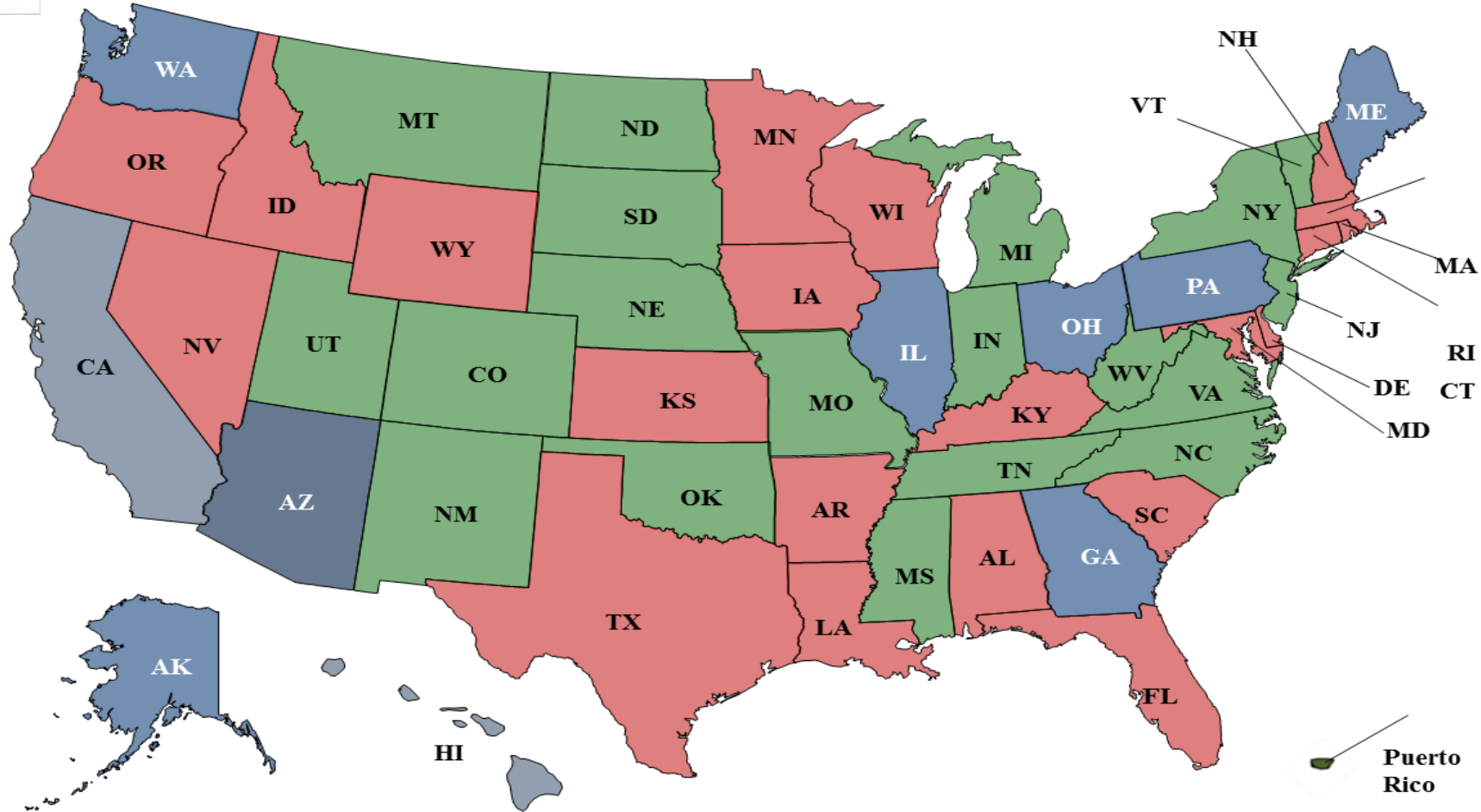


NORTH AMERICAN  
**SNOW**  
CONFERENCE





# National LTAP/TTAP Center Programs



Green – University Center

Red – Transportation Center

Blue – D.O.T. Center



# LEARNING RESOURCES INDUSTRY/ASSOCIATION

## Other Learning Resources

- FHWA/LTAP/D.O.T.
- Academic/Research Institutions
- Professional Associations
- Industry Contractors
- Professional Consultants
- Related Industries
- Military
- Google?

# LEARNING RESOURCES PARTNERSHIPS

Develop sound partnerships

- Identify where your (SME) Subject Matter Experts are
- How accessible are the resources
- How economical are the resources
- Mutual benefits
- Can we sustain the effort over a long period
- Can we grow to meet future needs



# TRAINING VS LEARNING

“SMOOTH SEAS DO NOT MAKE SKILLFUL SAILORS.”

*AFRICAN PROVERB*

# TRAINING VS LEARNING

## ADDING VALUE TO YOUR TRAINING – GETTING RESULTS

### TRAINING

- ➔ Employer contracts training
- ➔ Quality Training – Low Impact
- ➔ Used to solve problems
- ➔ Requires trainer, instructors, managers
- ➔ Centralized, departmentalized
- ➔ Focused on delivery and attendance

### LEARNING

- ➔ Employer allows time for learning everyday
- ➔ Less development - High Value
- ➔ Smarter, mobile, more agile, prevention
- ➔ Utilizes trainers but learning resides within the employees, enhances on-the-job learning
- ➔ Sharing knowledge among employees/teams
- ➔ Results matter



# TRAINING VS LEARNING

## EXAMPLE PROBLEM #1

Tree Care Company – Public Works

- How can we use this partnership in a training scenario?
- How can we use this partnership in a learning scenario?
- Where is the value for each partner?
  - City/County
  - Townsend





# TRAINING VS LEARNING

## EXAMPLE PROBLEM #2

### Truck Dealership – Public Works

- How can we use this partnership in a training scenario?
- How can we use this partnership in a learning scenario?
- Where is the value for each partner?
  - City/County
  - Truck Dealership



# TRAINING VS LEARNING

## EXAMPLE PROBLEM #3

### Public Works – Public Works

- How can we use this partnership in a training scenario?
- How can we use this partnership in a learning scenario?
- Where is the value for each partner?
  - City/County
  - City/County/D.O.T.





# TRAINING VS LEARNING IDEAS?

Can you think of a similar “Learning Style Partnership” you might use?

- Asphalt paving
- Concrete repairs
- Culvert replacement
- Anti-Icing
- Snowplow operator peer exchange
- Snowplow rodeo





# TRAINING VS LEARNING CHANGES TO CDL

- Those who are prepared and have a training plan may see less impact
- Develop a CDL program similar to police academy or fire academy
- Recruit from Industry and other departments, become competitive
- Retention of current drivers, career development, advancement and exit interviews



# TRAINING VS LEARNING CHANGES TO CDL

CDL driver training – look for new drivers in new places

- Career fares
- Local Industry that is withdrawing
- Recruit statewide or nationally, offer moving assistance
- Look at different demographics for talent



# DEVELOPING A LEARNING PLAN

“IT DOES NOT DO TO LEAVE A LIVE DRAGON OUT OF YOUR CALCULATIONS, IF  
YOU LIVE NEAR HIM.”

*J.R.R. TOLKIEN*





# TYPES OF LEARNING TO INCLUDE IN YOUR PLAN

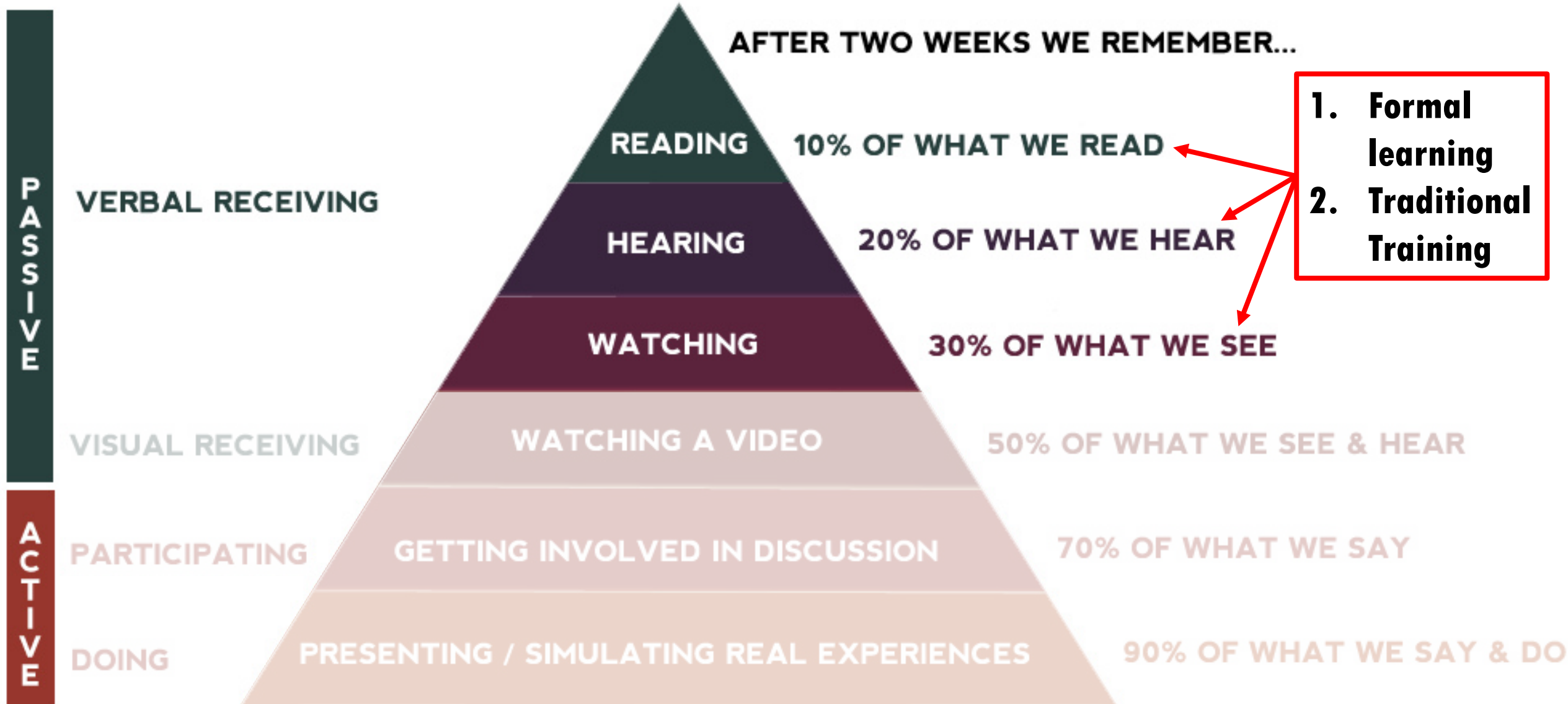
## Passive learning

- Traditional Classroom - Instructor lead
- Workshops - Conferences - Seminars
- \*Asynchronous online learning

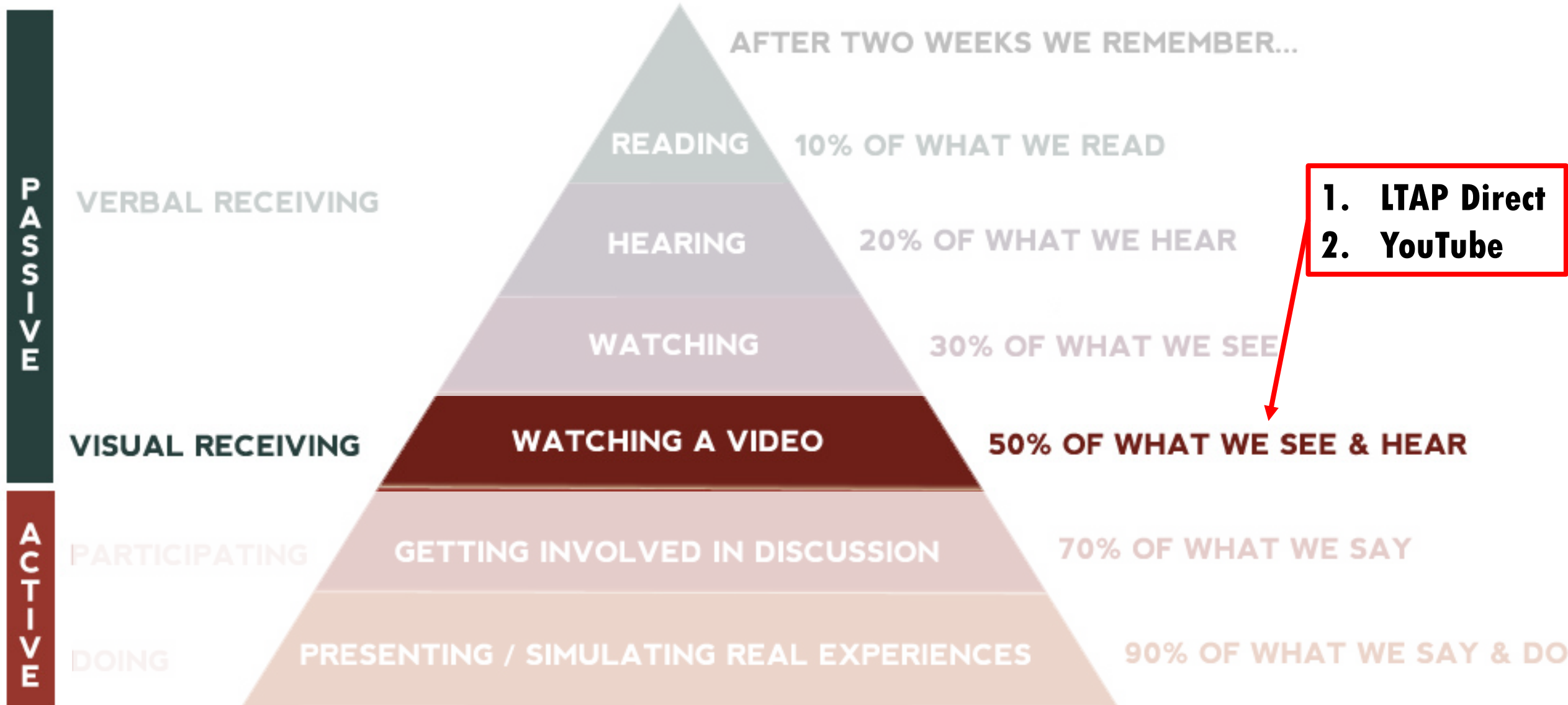
## Active learning

- Blended learning
- eLearning - Micro-learning
- On Demand Learning
- Career-driven learning
- Social learning

# THE LEARNING CONE (EDGAR DALE 1969)

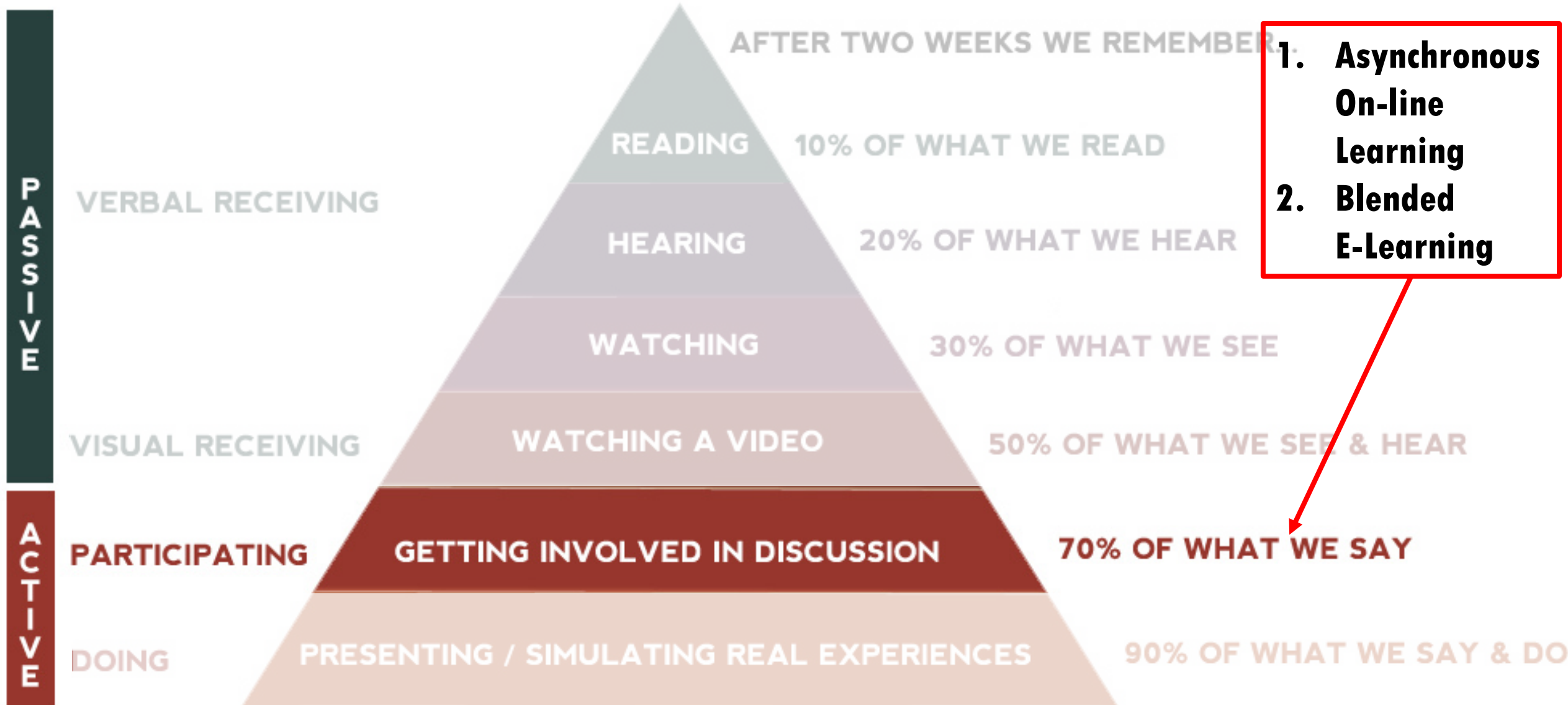


# THE LEARNING CONE (EDGAR DALE 1969)

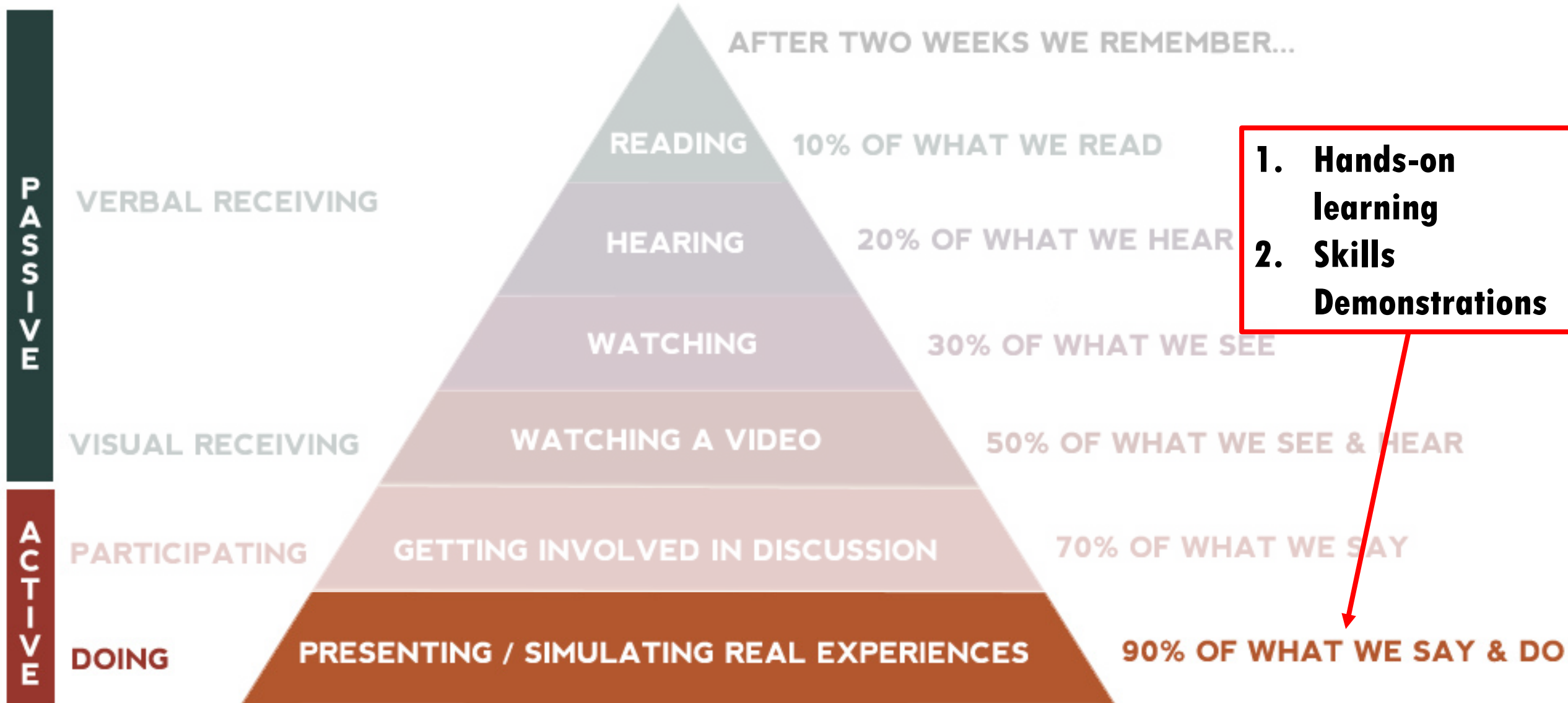




# THE LEARNING CONE (EDGAR DALE 1969)



# THE LEARNING CONE (EDGAR DALE 1969)





# INDIANA LTAP LEARNING PLAN

## Certification Courses:

- Project Management (2018)
- HMA Field Supervisor (2020)
- Chip Seal Certification (2021)



# INDIANA LTAP LEARNING PLAN



## E-learning Course Examples:

- New Employee Onboarding (2019)
- New Manager/First Time Manager (2020)
- Salt Spreader Calibration (2020)

## Blended E-learning Examples:

- Asset Management/PASER Training/Certification (2016)
- Temporary Traffic Control (2019)
- Indiana LTAP Snowplow Driver Certification (2021)

eLearning





# EXAMPLE LEARNING PLAN

[illegible]

# LEARNING TECHNOLOGY AVAILABLE

NO ONE WHO EVER BOUGHT A DRILL WANTED A DRILL. THEY WANTED A HOLE.  
IT'S THE TASK THAT MATTERS.

*PERRY MARSHALL*

# SKILLS ASSESSMENT

- Achieve results quicker and waste less time with unnecessary training
- Experience higher employee engagement, retention, productivity and performance.
- Resources for managers to use in coaching and developing their employees
- Public works employees tools to refine their skills and grow in your department



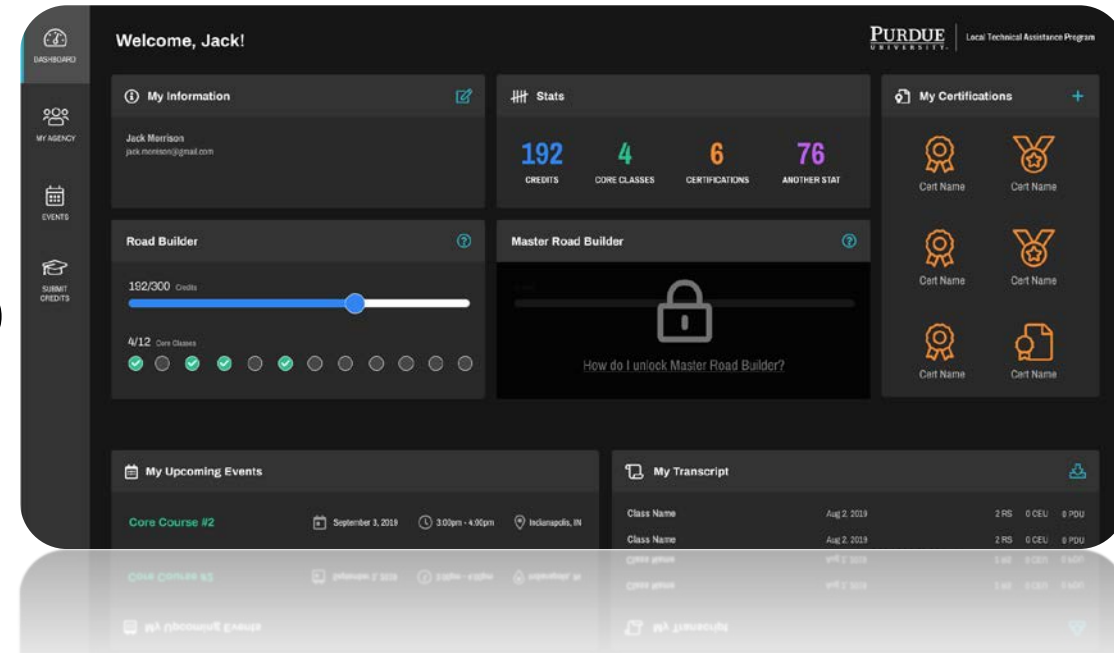
[Edwin Learning, LLC – John Ryyanen](https://www.gallup.com/cliftonstrengths/en/252137/home.aspx)

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# LEARNING MANAGEMENT SYSTEM

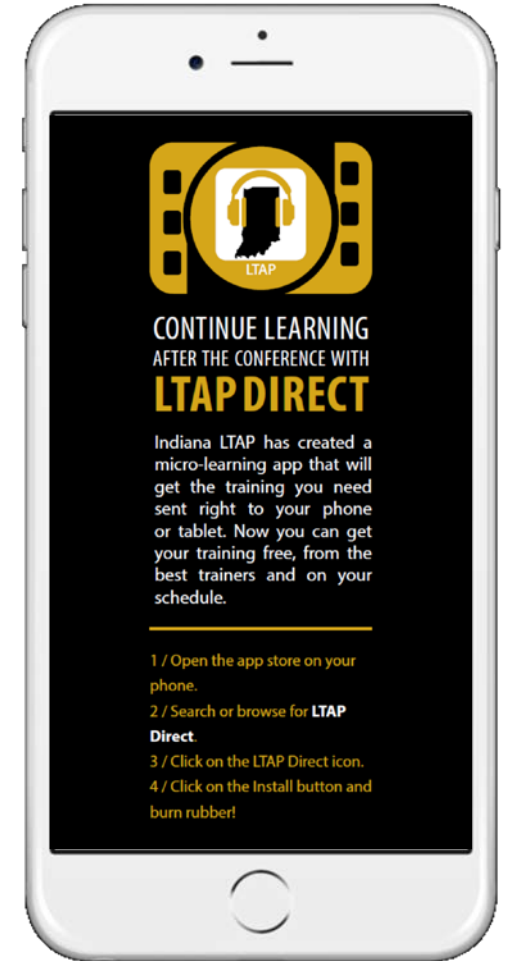
- Indiana LTAP's new learning management system is currently under development
- 1<sup>st</sup> phase will be complete in early 2020
- 2<sup>nd</sup> phase to include eLearning capacity for continuing education and onboarding functions
- Will include a repository for your individual educational activity



<https://xd.adobe.com/view/b2582347-fa43-405a-67e8-2893b9f860c1-c469/screen/964bedf3-84d1-4f28-af02-7586f7ee7bdd/Upcoming-Events?fullscreen&hints=off>

# LTAP DIRECT - MICROLEARNING IN THE WORKFORCE

- Learning delivered right to your phone – on demand – in the field
- Technical, roadway safety, workforce development
- Maintenance and operational tips from the pro's
- News and updates at your fingertips
- Tailgate safety talks
- LTAP “Tech Talks”



# ACTION ITEMS FOR TODAY

1. ASSESS YOUR WORKFORCE – SKILLS GAP ASSESSMENT AND TRAINING NEEDS
2. DEFINE THE NEED – WHAT AREAS DO WE NEED TO IMPROVE
3. MAKE LOTS OF FRIENDS – WHO WILL I CALL, WHO HAS A SIMILAR NEED
4. GET CREATIVE – FIND PARTNERS THAT ARE INSPIRED TO “JUMP IN” AND HELP
5. NO KIDDING – CREATE A LEARNING PLAN, AND MAKE IT A PART OF YOUR ANNUAL REPORTING TO YOUR PUBLIC WORKS BOARD





THANK YOU!



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