

APPENDIX E

EMPLOYEE SURVEY RESULTS  
TRAINING NEEDS BY JOB TITLE  
[NEEDS LISTED IN RANK ORDER]

Position Title	Technical Training Needs
Environmental Manager 2 (1LS2)	Environmental policy ArcGIS software Erosion and sediment control principles and methods Wetland/water regulatory permitting Wetland delineation
Environmental Scientist 3 (1LS3)	On-site erosion and sediment control Wetland delineation
HES 3 (6DC3)	Pavement training Access for disabled Crash barriers Environmental processes
HES 4 (6DC4)	Claims management Erosion and sediment control procedures and practices Traffic control Piling New road and bridge construction methods Bridge construction HMA paving Concrete paving Structural LRFD training Erosion and sediment control design Roundabout design ADA training Signal design Drainage design ArcView Pavement preservation Small structure design Work zone highway traffic analysis
HE 1 (1DC1)	Pavement design Training on Chapter 52 Construction inspection Pavement preservation Construction management Intersection/roadway design Structure design

Position Title	Technical Training Needs
HE 2 (1DC2)	HEC-RAS training Scour analysis at bridges Scour countermeasures Energy dissipator design Detention Pond design Bridge rehab Roundabout design Permits MUTCD refresher Traffic investigations Signals ADA R/W plans Small structure design LEVEL 1 design FHWA rules Railroad crossing design Soil loading Work safety MUTCD
HE 3 (1DC3)	GIS Pavement preservation Project scoping Winter operations Pavement design Hydraulics Latest advancements in pavement preservation/maintenance Latest advancements in design/traffic safety Latest advancements in highway technologies/products Traffic flow analysis Bridge rehab Small structures Roundabout design issues MEPDG pavement design Surface treatment, microsurface, HMA 4.75, Ultrathin Storm sewer design Water permitting Traffic signals Railroad system design Bridge design/build Right of way acquisition process Permits
HE 4 (1DC4)	Asphalt pavement Concrete and admixtures Bridge Signals Plan reading

Position Title	Technical Training Needs
HT 1 (4MB1)	Plan reading Road surveying Dirt compaction Bridge Misc construction items
HT 2 (4MB2)	Plan reading Surveying Environmental FCR Traffic control Bridge replacement Asphalt Soil testing Concrete testing
Sr Roadway Review Engineer (1DC2)	Interchange review Roundabout review Intersection sight distance Guardrail need CEDs
Roadway and Bridge Engineer/1DC3	LRFD Superstructure Bridge Rehabilitation methods InRoads Que analysis Signal and intersection design
Road Design Engineer/1DC3	InRoads Microstation Design topics
Sr Bridge Design Engineer/1DC1	Prestressed concrete design Steel bridge design Substructure design Seismic design for bridges Roadway design
Bridge Design Eng Assistant/1DC4	InRoads Microstation
Sr Bridge Inspection Engineer/1DC1	Fracture critical structures Scour critical structures In-depth bridge inspections Post-tensioned structures Fracture mechanics & fatigue
Bridge Inspection Engineer/1DC2	INDOT Bridge Inspection Manual InspectTech Bridge Inspection Database FHWA Bridge Inspection Manual Plan reading
Assistant Bridge Inspection Engineer/1DC3	Bridge inspection Fracture critical bridge inspection Best practices in bridge inspection Best practices in bridge maintenance ReachAll training

Position Title	Technical Training Needs
Assistant Bridge Inspector Engineer/1DC4	NBIS BR INSP Course UB-40 & UB-60 (ReachAll) Confined space entry Small structures insp Traffic control
Hydraulics Engineer/1DC2	Scour countermeasures
Hydraulics Engineer/1DC3	Scour countermeasures InRoads Scour & stream stability Pipe liner construction techniques
Sr Pavement Designer/1DC2	Pavement design ArcGIS MEPDG
CE 3 (1DZ3)	Pile driving Surveying Attenuator Traffic control Reflectivity Steel classifications New products
Special Projects Engineer (no code)	WMS system ADA curb ramps Environmental permitting Chip seal operations Salt rates for snow and ice operations—meridian system
Project Manager (EXBB)	Right of way design drawing Microstation Abstracting
Project Manager (1DC1)	Plan reading Intersections Environmental Design build process Asset management scoring process ROW process Project management process Budgeting process Highway lighting Traffic signals Guardrail Drain replacement Work zone safety Risk assessment
Engineer Field Construction/1DC1	Testing requirements HMA Pavement Construction PCCP Pavement Construction Pavement preservation Welding Post tensioning

Position Title	Technical Training Needs
Engineer Railroad & Utility/1DC1	Construction techniques Utility construction techniques Utility specifications
EAS 3 (no code)	Basic construction Asphalt Concrete
EA 1 (3AB1)	Test method
EA 4 (1DB4)	Highway plan interpretation Work zone traffic control Pavement specifications Utility specifications Real estate interpretation
Engineering Tech Supervisor 3 (8AB3)	Pile driving Surveying Plan reading Bridges Testing Records Inspection Concrete mix designs Surveying equipment usage
Electrician Tech Supervisor 4 (9GA4)	IMSA Level 1 IMSA Level 2 IMSA Level 3 IMSA Workzone WMS training
Electrician Tech 2 (4GA2)	Work zone safety IMSA Level 1 Roadway lighting IMSA Level 2 IMSA Level 3
Hwy Maint Supervisor (9MB4)	Snow plow operations Herbicide Bridge deck repairs Tree removal Chip seal
Materials Serv Engineer/6DC4	Bearing pad design and manufacture Engineering mechanics of structural fasteners Engineered plastics for Civil Engineers
Maintenance Supervisor 2 (9IC2)	MUTCD Paint/special marking applications Panel sign components and installation Stripping equipment and utilization Sign design and manufacturing
Field Investigator 3 (3KB3)	Intersections studies Crash studies GPS Clear Zone

Position Title	Technical Training Needs
Supvr Traffic Signals Equip/9GA3	Traffic safety Traffic signal cabinet trouble shooting Traffic signal field wiring trouble shooting Traffic signal control devices training
Independent Assurance Technician (no code)	Material sampling Material testing Special tests Precast items
Ecology and Permits Manager/6LS3	Plant identification Wildlife crossing design Designing green highways Stream and wetland hydraulics Clean Water Act legal training
Facilities Specialist Environment/1LS2	Asbestos building inspector Asbestos project designer Lead inspector Oil/Water separator Hazardous materials awareness
Specialist Stormwater/1LS2	Highway BMPs Highway stormwater design Highway erosion and sediment control practices NEPA Highway hydrology
Coordinator Survey/2WM1	Roadwork Safety GNSS Networks
Surveyor 3 (1DS3)	Survey principles Survey math InRoads Real estate broker CE Beginning appraising principles Nomenclature Specificity of submissions
Lead Photogrammetrist/1DS3	ERDAS software InRoads Microstation ArcGIS
Sr. Geotechnical Engineer (1DC2)	New design approach New testing method New exploration method Case history CPT
Geotech Engineering Geologist/1IE2	Rock mechanics Hydrogeology Geophysical exploration GIS
Quality Assurance Mgr. (EXBB)	High Mast Tower inspection Slip pipe lining Drainage inspection

<b>Position Title</b>	<b>Technical Training Needs</b>
Program Director 1 (2WM1)	WMS ArcGIS Procedures for LPA acquisitions FHWA regulations for LPA's and INDOT Abstracting Appraising procedures Buying and/or negotiating procedures Plan reading Real estate Utility coordination RR coordination