



**GIS CERTIFICATION INSTITUTE**

# **GISP UPDATE**

**Presented By:**

**Magdalena DiFranco, GISP (25 Jan 2021)**

**and**

**Scott Swan, GISP (25 July 2006)**

**IMAGIN Board of Directors**

**August 2021**



# GISP UPDATE

2003: GISCI - First GISP certification

2015: GISCI - Core Technical Knowledge Exam®

This session will focus on the value and growth of GIS professional certification and where GISCI and the GISP certification will go from here.



# GISP – An Updated Perspective



Certification

GISP Certification History

GISP Current Process

Exam Creation

Future Direction



# GISP – An Updated Perspective

## WHY CERTIFY?

Professional certification is a process by which a person shows that she has acquired the knowledge, experience, and skills to perform a specific profession.



# HOW DO WE MOVE FROM THE BIRTH OF AN INDUSTRY TO CERTIFICATION?



**ALL INDUSTRIES FOLLOW THE SAME PATHWAY, REGARDLESS OF TIMEFRAME**



# One certification generally leads to another

Managerial  
Certification

Higher Level  
Certification

Entry Level  
Certification

General  
Certification

Provisional  
Certification



# GISP – An Updated Perspective

## CERTIFICATION vs LICENSURE

Over 1,600 types of Certifications exist across a myriad of industries

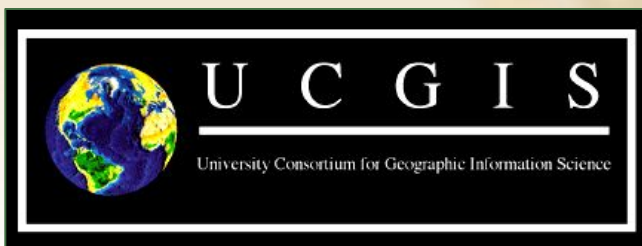
In 2016, approx. 17% of civilian, noninstitutional workers held a certification or license.

(data: Bureau of Labor Statistics 2016)



**GIS CERTIFICATION INSTITUTE**

# GISCI Member Organizations







# GISP – An Updated Perspective

Certification



GISP Certification History

GISP Current Process

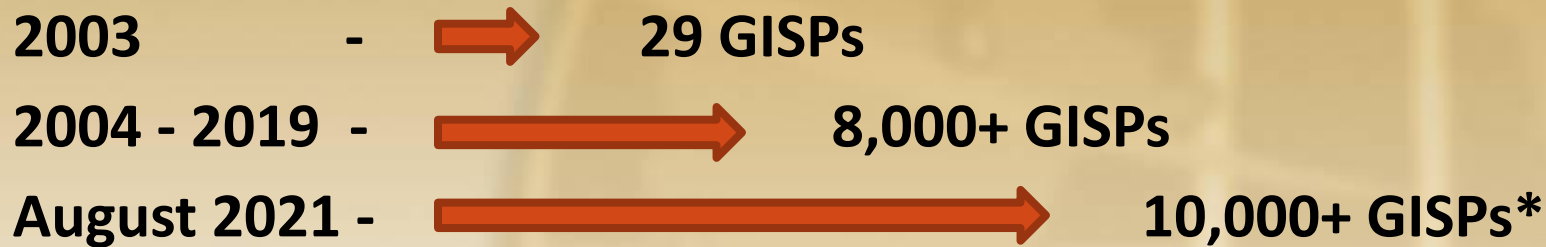
Exam Creation

Future Direction



## ACTIVE GISPs: CERTIFICATION HISTORY

Since its inception, the number of GISPs has expanded worldwide.



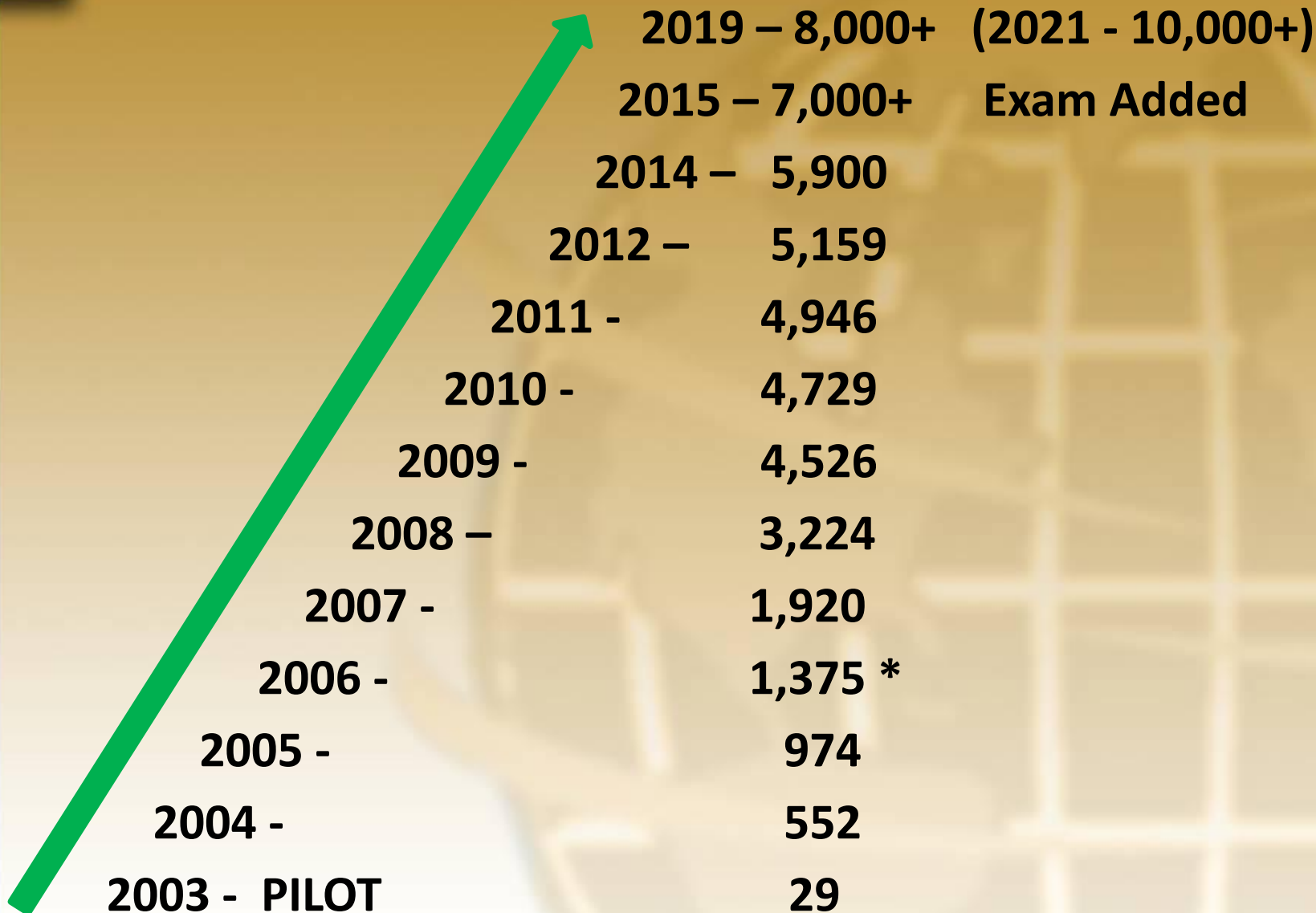
\*Currently registered (some have expired)

Future – 20,000 GISPs + by 2026 ?



# GIS CERTIFICATION INSTITUTE

## ACTIVE GISPs: CERTIFICATION HISTORY





# GISP – An Updated Perspective

Certification

GISP Certification History



GISP Current Process

Exam Creation

Future Direction



# GISP Current Process

## Initial GISP: Portfolio Requirement & Exam

- Ethics Statement
- 4+ Years of Geospatial Experience
- Portfolio Application
  - Education, Experience, Contributions
  - Minimum Points Req in Each Category
- **GISCI Geospatial Core  
Technical Knowledge Exam**



# GISP Current Process

## **Recertification: Portfolio Requirement**

- Education & Contributions Required
  - Experience is Optional
  - No Exam for Recertification
- Online Application
- 3 Year Recertification Period



# GISP Current Cost

## Initial GISP Cost:

- Application Fee - \$ 100
- Portfolio Review Fee - \$ 100
- Exam Fee - \$ 250 (\$ 300 International)
- 3 Year Certification Period
- **Annual Maintenance Fee of \$ 95/yr** starts in the 2<sup>nd</sup> year of initial certification period



# GISP Current Cost

## Recertification Cost:

- Annual Maintenance Fee continues-
  - \$ 95/year or \$ 285 one-time payment
  - No Recertification Exam
- 3 Year Certification Period
- Online Recertification Application





# GISCI – An Updated Perspective

Certification

GISP Certification History

GISP Current Process



Exam Creation

Future Direction



# Exam Creation History

- Aug 2012 - GISCI Board Selects Exam Development Project Mgr & Psychometric Consultant – Starts Job Analysis**
- Nov 2015 - Inaugural Exam Deployment**
- Summer/Fall - Exam Testing Windows**

**The exam is administered twice each year**



# Exam Creation

- Written by GISPs for GISP Certification
- Composed at a 4-year Experience Level
- Centered on Applied Knowledge
  - Not software-based
- Based on the jobs performed by the GISPs:
  - 44 KSAs\* were selected for exam coverage

\*KSA – Knowledge, Skills, Abilities



# Exam Creation Considerations

## MAJOR CONSIDERATIONS

- **Two Exam offerings each year in early June & Dec**
- **Exam can be taken at any time in a person's career**
  - **180 questions in 4 hours**
- **Students can test at the time they graduate or during school**
- **6-year window to complete Certification once you either:**
  - **Pass the exam OR**
  - **Portfolio is approved**



# Exam Creation Considerations

## Selection of Knowledge Areas for Exam

- **Started with the GISP community**
- **Job analysis, DACUMs, focus groups to examine GIS tasks**
- **Over 400 GIS Knowledge areas identified**
  - **The GIS&T Body of Knowledge**
  - **only about 10% were relevant to all GISP fields**
- **44 KSAs\* were selected for exam coverage**

**\* knowledge, skills, abilities**



# Exam Creation

**For Comparison: GIS&T Body of Knowledge 2006**

**GIS&T Body of Knowledge: 400+ topics included**

<b>Knowledge Area</b>	<b>Units</b>	<b>Topics</b>
<b>Analytical Methods</b>	<b>12</b>	<b>59</b>
<b>Conceptual Foundations</b>	<b>6</b>	<b>30</b>
<b>Cartography &amp; Visualization</b>	<b>6</b>	<b>27</b>
<b>Design Aspects</b>	<b>7</b>	<b>32</b>
<b>Data Modeling</b>	<b>5</b>	<b>23</b>
<b>Data Manipulation</b>	<b>3</b>	<b>14</b>
<b>Geocomputation</b>	<b>9</b>	<b>40</b>
<b>Geospatial Data</b>	<b>12</b>	<b>47</b>
<b>GIS&amp;T Society</b>	<b>7</b>	<b>21</b>
<b>Organizational &amp; Institutional Aspects</b>	<b>6</b>	<b>32</b>



# Exam Creation

## EXAM BLUEPRINT: Exam Components selected for testing

Knowledge Categories	Weight
1. Conceptual Foundations	10%
2. Geospatial Data Fundamentals	15%
3. Cartography and Visualization	10%
4. Data Acquisition	11%
5. Data Manipulation	11%
6. Analytical Methods	11%
7. Database Design and Management	10%
8. Application Development	7%
9. Systems Design and Management	7%
10. Professional Practice	8%
<i>Total</i>	<i>100%</i>

**Exam to be offered every 6 months – Summer & Fall Windows**



# GIS CERTIFICATION INSTITUTE

Current KSA	1. Conceptual Foundations	Original KSA(s)
101	Understanding of datums, coordinate systems, and projections	105
102	Understanding of representation of discrete features and continuous phenomena in GIS	103
103	Knowledge of earth geometry and its approximations	104
104	Knowledge of basic geomatics and relationships to GIS	643

Current KSA	2. Geospatial Data Fundamentals	Original KSA(s)
201	Understanding of spatial data models and their associated planar geometries	102, 324,426
202	Understanding of spatial data relationships	536
203	Understanding of data quality	538,640
204	Understanding of data resolution	538
205	Understanding of data validation and uncertainty	640, 103
206	Understanding of metadata	639
207	Knowledge of temporal data	103
208	Knowledge of spatial data standards, including ISO, FGDC, and OGC	639

Current KSA	3. Cartography and Visualization	Original KSA(s)
301	Understanding of graphic representation techniques and implications	209
302	Understanding of map design principles and essential map elements	210,211,431
303	Understanding of surface interpretation and representation	206,207, 209
304	Understanding of 2D and 3D visualization	206





# GIS CERTIFICATION INSTITUTE

Current KSA	4. Data Acquisition	Original KSA(s)
401	Understanding of digitization and other manual data collection and conversion methods	208,537
402	Knowledge of field data collection	644
403	Knowledge of automated data collection and conversion methods	537, partially new
404	Knowledge of remotely sensed data sources and collection methods	643
405	Knowledge of acquisition, use, and limitations of crowdsourced and open source data and services	323,322,538, partially new

Current KSA	5. Data Manipulation	Original KSA(s)
501	Understanding of georeferencing, data format conversion, and data transformation	312,105,537
502	Understanding of spatial data generalization operations and methods	103,209
503	Understanding of spatial file types and their applications and limitations	534,318,321
504	Understanding of data integration	534, 537, 538, partially new

Current KSA	6. Analytical Methods	Original KSA(s)
601	Understanding of data selection queries and views	533
602	Understanding of techniques and implications of data classification	211
603	Understanding of analytical operations and methods	425
604	Knowledge of map algebra	427
605	Knowledge of descriptive and spatial statistics	428



Current KSA	7. Database Design and Management	Original KSA(s)
701	Understanding of relationships among database objects	317,320,536
702	Understanding of database design	319,536
703	Knowledge of database management and administration	314
704	Knowledge of data security	313

Current KSA	8. Application Development	Original KSA(s)
801	Knowledge of data transfer protocols	312,537
802	Knowledge of coding, scripting, and modeling basics	429
803	Awareness of basic application development methods	322

Current KSA	9. Systems Design and Management	Original KSA(s)
901	Knowledge of systems architecture and design, including various GIS softwares, platforms, and environments	315,316,322,323
902	Knowledge of systems and application security	313
903	Awareness of trends in geospatial technology	643, partially new

Current KSA	10. Professional Practice	Original KSA(s)
1001	Understanding of appropriate interpretation of work-related policies and procedures	new
1002	Understanding of ethics related to technical GIS work	643, partially new
1003	Knowledge of managing, documenting, and communicating GIS work	new
1004	Awareness of how GIS is used across other professions	643, partially new
1005	Awareness of GIS-related professional organizations and certification	new



# Exam Creation Review

**EXAM BLUEPRINT: Exam Components selected for testing**

Knowledge Categories		Weight
1.	Conceptual Foundations	10%
2.	Geospatial Data Fundamentals	15%
3.	Cartography and Visualization	10%
4.	Data Acquisition	11%
5.	Data Manipulation	11%
6.	Analytical Methods	11%
7.	Database Design and Management	10%
8.	Application Development	7%
9.	Systems Design and Management	7%
10.	Professional Practice	8%
	<i>Total</i>	<i>100%</i>

**Exam to be offered every 6 months – Summer & Fall Windows**



# Exam Creation

## ADVANTAGES OF AN EXAM

- Provides for a Measurable Competency Level
- Increased industry demand for GISP as a credential in job descriptions
- Provides increased visibility for GISP Professional Certification
- Builds upon the Established, Successful, Recognized GISP Portfolio
- **Provides for increased participation for Students and early career professionals**
- Provides a basis for a move to more specialized certifications
- **It continues to advance and consolidate the profession**



# Exam Creation

## *ADVICE TO A STUDENTS & YOUNG PROFESSIONALS*

- Start a profile on LinkedIn and start making connections
- Start a Portfolio on the GISCI site and work towards a GISP
- Plan to take the GISCI Exam as a means to differentiate yourself
- Join an association/s while in school – participation counts
- Attend a local GIS User Group
  
- **Show an employer you are looking to the future**



# Exam Creation

## PREPARE FOR AN EXAM

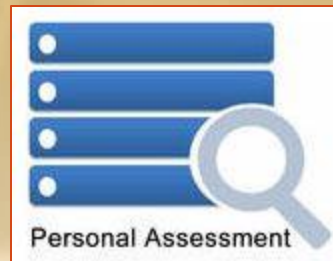
- Download and study the Exam Candidate Manual from GISCI's site
  - **Concentrate on the 44 KSAs identified**
- Examine the GIS&T Body of Knowledge for reference material
- Examine URISA's site for Exam Preparation Workshop Info
- Search the web for individual KSA materials
- Refer to your own textbooks and class materials
- Visit GISCI's link on our site to Exam Information, including the Official Practice Exam
- **<https://www.gisci.org/ExamInfo.aspx>**



# Exam Creation

## PREPARE FOR AN EXAM

- Visit the GeoTech Center website
  - [www.geotechcenter.org](http://www.geotechcenter.org)
- Take the Personal Assessment Tool Online Survey



- An official Practice Exam is posted on the GISCI site
  - <https://www.gisci.org/ExamInfo/PracticeExam.aspx>
- Exam preparation materials are posted on the GISCI site

**The key is to focus on the KSAs covered – NOT the entire geospatial world!**



# GISP – An Updated Perspective

Certification

GISP Certification History

GISP Current Process

Exam Creation



Future Direction





# Future Direction

- **Exam Maintenance & Updating**
- **GISP Certification Specializations**
- **Increased International Growth**
- **New Member Organizations**
- **Increased participation - 20,000 GISPs by 2026?**



# Future Direction

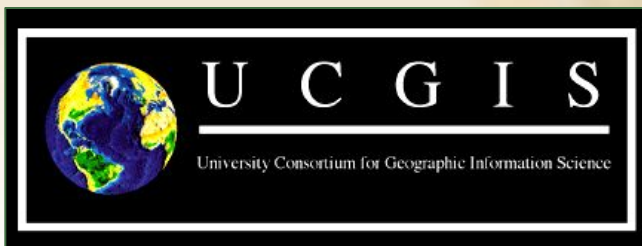
- **Greater Student Involvement**
- **USGS – GISCI GIS Summer Intern Program**
- **Students who register with GISCI & start their Portfolio are eligible for early consideration for GIS Summer Intern positions with USGS**

**[www.gisci.org/Students/Internships.aspx](http://www.gisci.org/Students/Internships.aspx)**



**GIS CERTIFICATION INSTITUTE**

# Member Organizations





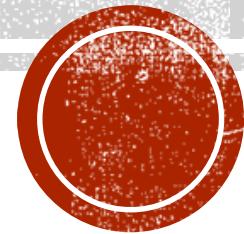
**THANK YOU!**

**Scott Swan, GISP: [sswan@nmc.edu](mailto:sswan@nmc.edu)**

**Magdalena DiFranco, GISP:  
[m.difranco@clintontownship-mi.gov](mailto:m.difranco@clintontownship-mi.gov)**

**[www.gisci.org](http://www.gisci.org)  
[www.imagin.org](http://www.imagin.org)**

# HOW I GOT MY GISP CERTIFICATION



**Magda DiFranco, GISP (1/25/2021)**

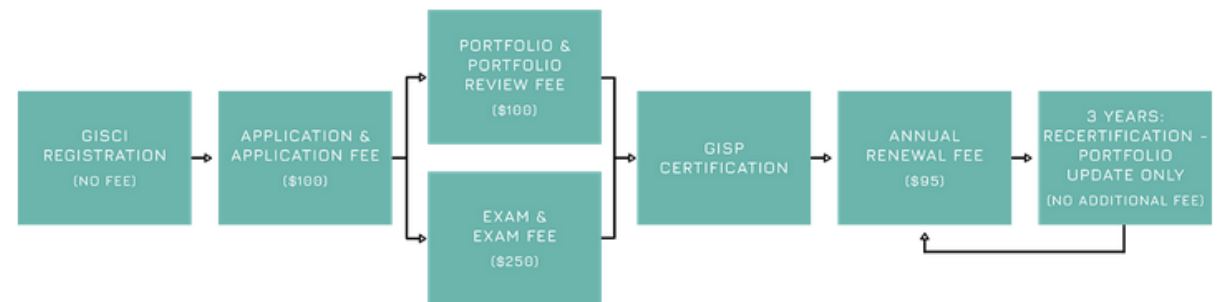
GIS Specialist

Charter Township of Clinton

# STANDARD GISP CERTIFICATION PATH

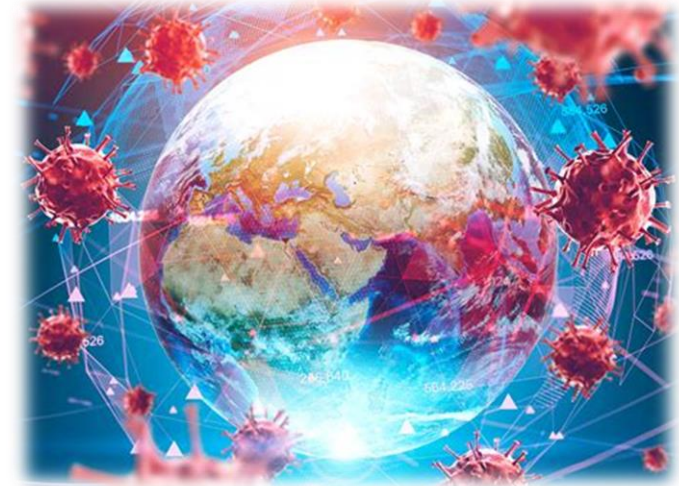
- Gather up your documents
- Complete the application\*
- Submit the application
- Approval of the application
- Register for the exam
- Study for the exam
- Take the exam
- Pass the exam
- Get certified and celebrate
- Add letters after your name
- Get a pin and certificate in the mail
- Start gathering up the docs for recertification in 3 years

\*You can take the exam before completing the application



# MY GISP CERTIFICATION PATH

- Gather up your documents (2018)
- Complete the application (2018-2019)
- Submit the application (2019)
- Approval of the application (February 2020)
- Finally register for the exam (February 2020)
- Beginning of a global pandemic (March 2020)
- Kind of study for the exam while under statewide Stay At Home order (March-May 2020)
- Stay At Home order is lifted; testing center restrictions still in place (June 1, 2020)
- Exam gets cancelled 24 hours before (June 2020)
- Wait and reschedule the exam for the next session in December (July 2020)



# MY GISP CERTIFICATION PATH



- Study for the exam again hoping it doesn't get cancelled again (Oct-Dec 2020)
- Take the new practice exam twice (October & December 2020)
- At 23 hours prior to the exam get excited that it will actually happen this time (Dec 2020)
- Take a 4 hour exam at a testing center full of other test takers while wearing a mask (December 2020)
- Pass the exam (January 2021)
- Get certified, receive my certification number and celebrate at home (January 2021)
- Add letters after my name
- Get a pin and certificate in the mail (March 2021)
- Start gathering up the docs for recertification in 3 years



**GIS Certification Institute**

Magdalena,

You are receiving this email because you took the Fall 2020 GISCI Geospatial Core Technical Knowledge Exam. Thank you for your patience as we completed our exam review and analysis.

**Congratulations, we are pleased to inform you that you officially Passed the exam!**



# EXAM PREP TIPS

- Review material and prepare in advance – the night before is not going to cut it
- Review GISCI website for exam info and resources <https://www.gisci.org/ExamInfo.aspx>
- [Unofficial Study Guide](#)
- [Take Practice Exam](#) – can be taken twice; score report with strengths/weaknesses by area
- URISA Prep Workshop – [2018 Recording on YouTube](#) or some in-person/full day offerings
- GIS/Cartography/Geography textbooks, courses, etc
- Know what to expect

GISCI Geospatial Core Technical Knowledge Exam® Knowledge Categories

Knowledge Category	Weight
1. Conceptual Foundations	10%
2. Geospatial Data Fundamentals	15%
3. Cartography & Visualization	10%
4. Data Acquisition	11%
5. Data Manipulation	11%
6. Analytical Methods	11%
7. Database Design & Management	10%
8. Application Development	7%
9. Systems Design & Management	7%
10. Professional Practice	8%
10. Total	100%

- 180 questions - Multiple Choice & Multiple Response

(“Select all that apply”, at least 2 correct answers)

- only 100 scored but you don't know which
- 4 hours
- on a computer at one of PSI Testing Centers
- only given pen & paper
- pass/fail at 73 correct



# TEST TAKING TIPS

- Get a good night of sleep
- Use your time wisely – if you are stuck on a question, mark it and move on; no extra points for finishing early
- Read questions carefully
- Do 3 passes
  - 1 – answer all questions you know the answer to for sure; mark the rest for review
  - 2 – review your marked questions, narrow down your choices - maybe something in the rest of the test was helpful or jogged your memory
  - 3 – if all else fails, guess!



# FINAL THOUGHTS

- Don't let the exam stop you from applying and completing your certification
- Start the process as early in your career as possible
- Catalog your experiences and contributions along the way
- GISP Certification is useful for career advancement

