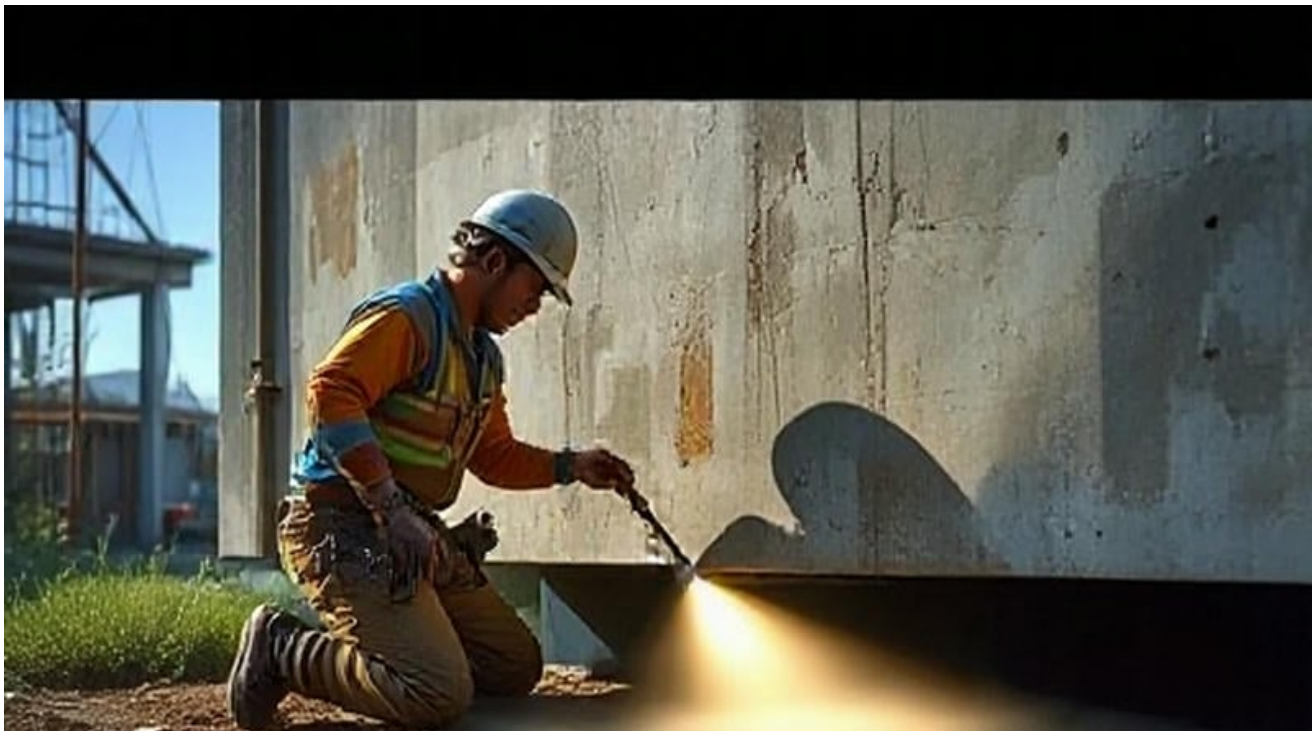
Residential Foundation

- **Recognizing Shifts in the Home Foundation**
  Recognizing Shifts in the Home Foundation Subtle Clues That Indicate Structural Changes Early Indicators of Potential Foundation Damage Observing Signs of Settlement in Floors Identifying Hairline Cracks and Surface Gaps Evaluating Tilted Door Frames and Window Alignment Understanding Bowed Wall Patterns in Basements Detecting Weak Spots Beneath Interior Flooring Uncovering Gradual Shifts in Support Beams Pinpointing Areas Prone to Moisture Intrusion Checking for Stair-Step Cracks Along Walls Preventing Growth of Small Foundation Cracks
- **Exploring Slab on Grade Construction Details**
  Exploring Slab on Grade Construction Details Comparing Pier and Beam Home Foundations Recognizing Basement Foundations in Older Houses Understanding the Basics of Piering Strategies Exploring Techniques for Slab Jacking Projects Grasping the Scope of Epoxy Injection Repairs Assessing Helical Piers for Added Support Considering Carbon Fiber Solutions for Wall Reinforcement Discovering Polyurethane Foam Applications Investigating Steel Piers in Home Restoration Reviewing Concrete Piers for Structural Stability Selecting Appropriate Methods for Specific Soil Types
- **About Us**



The foundation of a home is often likened to the backbone of a human body. Cracked walls indicate the need for foundation repair service **foundation repair service** asset. It's the unsung hero that bears the weight of the entire structure, ensuring stability and safety. However, just like the human body, a home's foundation can experience shifts and changes over time. Recognizing these shifts is crucial for homeowners, as early detection can prevent minor issues from escalating into major, costly repairs.

One of the most telltale signs of a shifting foundation is the appearance of cracks in walls, floors, or ceilings. These cracks may seem innocuous at first, but they can be the first red flag signaling that the foundation is moving. Vertical cracks are generally less concerning and often a result of normal settling. However, horizontal cracks or cracks that appear in a stair-step pattern along brickwork should raise immediate concern, as they indicate more significant movement and potential structural issues.

Another sign to watch for is doors and windows that suddenly become difficult to open or close. This might seem like a minor annoyance, but it can be a direct result of a shifting foundation. As the foundation moves, it can cause the framing of the house to become misaligned, leading to doors and windows that no longer fit properly in their frames.

Uneven or sloping floors are another indicator of foundation problems. While it's normal for older homes to have some degree of unevenness due to settling, a noticeable slope or dip in the floor can point to a more serious issue with the foundation.

Recognizing Shifts in the Home Foundation - Water damage

1. safety
2. roof
3. brickwork

Homeowners should pay attention to areas where marbles or small balls tend to roll in one direction, as this can be a sign that the foundation is shifting.

Recognizing Shifts in the Home Foundation - Penndel

1. concrete slab
2. Water damage
3. Penndel

Outside the home, homeowners should keep an eye on the ground around the foundation. If there are areas where the soil is pulling away from the house, creating a gap, this can be a sign of foundation movement. Similarly, if there are areas where water pools near the foundation after rain, this can indicate that the ground is shifting and causing the foundation to settle unevenly.

Chimneys that appear to be leaning or pulling away from the house are another sign of a shifting foundation. The chimney is often one of the heaviest parts of a home, and as the foundation moves, it can cause the chimney to tilt or separate from the rest of the structure.

Recognizing these shifts in the home foundation is the first step towards addressing potential problems. Homeowners who notice any of these signs should consider consulting with a professional foundation specialist. Early intervention can often mitigate the damage and prevent more extensive repairs down the line.

In conclusion, a home's foundation is the bedrock of its stability and safety.

Recognizing Shifts in the Home Foundation - Water damage

1. attic
2. home inspection
3. Woodlyn

By staying vigilant and recognizing the signs of shifting, homeowners can take proactive steps to ensure their home remains a safe and secure haven for years to come. Regular inspections and prompt action upon noticing any of these warning signs are essential in maintaining the integrity of a home's foundation.

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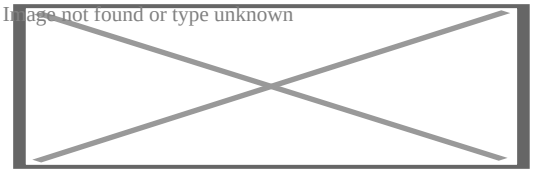
About Chicago metropolitan area

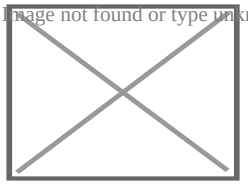
"Chicagoland" redirects here. For other uses, see Chicagoland (disambiguation).

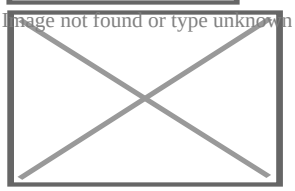
Chicago metropolitan area

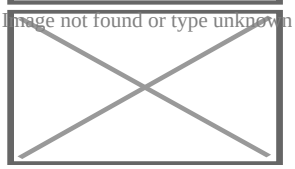
Conurbation

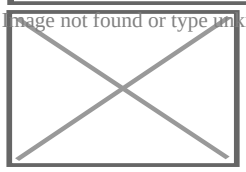
Chicago–Naperville, IL–IN–WI
Combined Statistical Area











From top, left to right: Chicago skyline from Lakefront Trail at Northerly Island during sunrise, aerial view Evanston, view of Gold Coast, Downtown Naperville, view of Downtown Aurora

Map

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Map of Chicago–Naperville, IL–IN–WI CSA

Chicago–Naperville–Schaumburg, IL

Elgin, IL Metropolitan Division

Lake County, IL Metropolitan Division

Lake County–Porter County–Jasper Cty, IN

Other Statistical Areas in the Chicago CSA

Kenosha, WI MSA

Ottawa, IL µSA

Michigan City–La Porte, IN MSA

Kankakee, IL MSA

City of Chicago

Chicago–Naperville–Elgin, IL–IN MSA

Country United StatesStates Illinois Image not found or type unknown Image not found or type unknown

Image not found or type unknown Indiana

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Image not found or type unknown WisconsinCore city Image not found or type unknown ChicagoSatellite cities

- - Aurora
- - Elgin
- - Crystal Lake
- - Joliet
- - Naperville
- - Schaumburg
- - Waukegan
- - Kankakee

- - Gary
- - Hammond
- - Michigan City
- - Kenosha

Area

• Metro

10,856 sq mi (28,120 km^2)Highest elevation

[1]

673 ft (205 m)Lowest elevation

[1]

579 ft (176 m)Population

• Density886/sq mi (342/km^2) • Metropolitan Statistical Area (MSA) (2022)

9,441,957[2] (3rd) • Combined Statistical Area (CSA) (2022)

9,806,184 [3] (4th)DemonymChicagolanderGDP

[4]

• Metropolitan Statistical Area (MSA)$894.862 billion (2023) • Combined Statistical Area (CSA)$919.229 billion (2023)Time zoneUTC?6 (CST) • Summer (DST)UTC?5 (CDT)Area codes219, 224/847, 262, 312/872, 331/630, 574, 464/708, 773/872 and 779/815

The **Chicago metropolitan area**, also referred to as **Chicagoland**, is the largest metropolitan statistical area in the U.S. state of Illinois, and the Midwest, containing the City of Chicago along with its surrounding suburbs and satellite cities. Encompassing 10,286 square mi (28,120 km^2), the metropolitan area includes the city of Chicago, its suburbs and hinterland, that span 13 counties across northeast Illinois and northwest Indiana. The MSA had a 2020 census population of 9,618,502 and the combined statistical area, which spans 19 counties

and additionally extends into southeast Wisconsin, had a population of nearly 10 million people.[5][6] The Chicago area is the third-largest metropolitan area in the United States and the fourth-largest metropolitan area in North America (after Mexico City, New York City, and Los Angeles), and the largest in the Great Lakes megalopolis. Its urban area is one of the 40 largest in the world.

According to the 2020 census, the metropolitan's population is approaching the 10 million mark. The metropolitan area has seen a substantial increase of Latin American residents on top of its already large Latino population, and the Asian American population also increased according to the 2020 Census. The metro area has a large number of White, Black, Latino, Asian, and Arab American residents, and also has Native American residents in the region, making the Chicago metropolitan area population truly diverse. The Chicago metropolitan area represents about 3 percent of the entire US population.

Chicagoland has one of the world's largest and most diversified economies. With more than six million full and part-time employees, the Chicago metropolitan area is a key factor of the Illinois economy, as the state has an annual GDP of over $1 trillion.[7] The Chicago metropolitan area generated an annual gross regional product (GRP) of approximately $700 billion in 2018.[8] The region is home to more than 400 major corporate headquarters, including 31 in the *Fortune* 500[9] such as McDonald's, United, and Blue Cross Blue Shield. With many companies moving to Chicagoland, and many current companies expanding, the area ranked as the nation's top metropolitan area for corporation relocations and expansions for nine consecutive years, the most consecutive years for any region in the country.[10]

The Chicago area is home to a number of the nation's leading research universities including the University of Chicago, Northwestern University, the University of Illinois at Chicago, DePaul University, Loyola University, and the Illinois Institute of Technology (IIT). The University of Chicago and Northwestern University are consistently ranked as two of the best universities in the world.

There are many transportation options around the region. Chicagoland has three separate rail networks; the Chicago Transit Authority (CTA), Metra, and the South Shore Line. The CTA operates elevated and subway lines that run primarily throughout the city, Downtown Chicago, and into some suburbs. The CTA operates some of its rail lines 24 hours a day, every day of the year, nonstop service, making Chicago, New York City, and Copenhagen the only three cities in the world to offer some 24 hour rail service running nonstop, everyday throughout their city limits. The Metra commuter rail network runs numerous lines between Downtown Chicago and suburban/satellite cities, with one line stretching to Kenosha, Wisconsin, which is part of the Chicago metropolitan area. The interurban South Shore Line runs between Downtown Chicago and the northwest Indiana portion of the metropolitan area. In addition, Amtrak operates Union Station in Downtown Chicago as one of its largest rail hubs, with numerous lines radiating to and from the station.

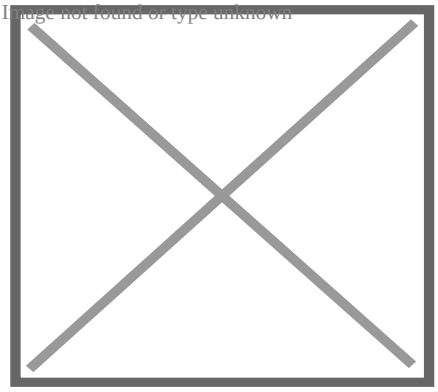
CTA bus routes serve the city proper, with some service into the suburbs. Pace bus routes serve the suburbs, with some service into the city. In addition, numerous CTA bus routes operate 24 hours a day, nonstop.

Definitions

[edit]

Chicago Metropolitan statistical area

[edit]



The Chicago–Naperville, IL–IN–WI Combined Statistical Area as defined by the U.S. Office of Management and Budget:

- Chicago–Naperville–Elgin, IL–IN–WI MSA
- Michigan City–La Porte, IN MSA
- Kankakee, IL MSA
- Ottawa, IL MSA

The Chicago metropolitan statistical area (MSA) was originally designated by the United States Census Bureau in 1950. It comprised the Illinois counties of Cook, DuPage, Kane, Lake and Will, along with Lake County in Indiana. As surrounding counties saw an increase in their population densities and the number of their residents employed within Cook County, they met Census criteria to be added to the MSA. The Chicago MSA, now defined by the U.S. Office of Management and Budget (OMB) as the **Chicago–Naperville–Elgin, IL–IN–WI Metropolitan Statistical Area**, is the third-largest MSA by population in the United States. The 2022 census estimate for the population of the MSA was 9,441,957.[11]

The Chicago MSA is further subdivided into four metropolitan divisions. A breakdown of the county constituents and 2021 estimated populations of the four metropolitan divisions of the MSA are as follows:[11]

Chicago–Naperville–Elgin, IL–IN–WI Metropolitan Statistical Area (9,509,934)

- *Chicago–Naperville–Schaumburg, IL Metropolitan Division* (7,159,394)
  - Cook County, Illinois (5,173,146)
  - DuPage County, Illinois (924,885)
  - Grundy County, Illinois (52,989)
  - McHenry County, Illinois (311,122)
  - Will County, Illinois (697,252)
- *Elgin, IL Metropolitan Division* (750,869)
  - DeKalb County, Illinois (100,414)
  - Kane County, Illinois (515,588)
  - Kendall County, Illinois (134,867)
- *Lake County, IL Metropolitan Division* (711,239)
  - Lake County, Illinois (711,239)
- *Lake County–Porter County–Jasper County, IN Metropolitan Division* (719,700)
  - Jasper County, Indiana (33,091)
  - Lake County, Indiana (498,558)
  - Newton County, Indiana (13,808)
  - Porter County, Indiana (174,243)

Combined statistical area

[edit]

The OMB also defines a slightly larger region as a combined statistical area (CSA). The **Chicago–Naperville, IL–IN–WI Combined Statistical Area** combines the following core-based statistical areas, listed with their 2021 estimated populations. The combined statistical area as a whole had a population of 9,806,184 as of 2022.[11]

- *Chicago–Naperville–Elgin, IL–IN–WI metropolitan statistical area* (9,509,934)
- *Kankakee, IL metropolitan statistical area* (106,601)
  - Kankakee County, Illinois (106,601)
- *Michigan City–La Porte, IN metropolitan statistical area* (112,390)
  - LaPorte County, Indiana (112,390)
- *Ottawa, IL micropolitan statistical area* (147,414)
  - Bureau County, Illinois (32,883)
  - LaSalle County, Illinois (108,965)
  - Putnam County, Illinois (5,566)

United Nations' Chicago urban agglomeration

[edit]

The Chicago urban agglomeration, according to the United Nations *World Urbanization Prospects* report (2023 revision), lists a population of 8,937,000.[12] The term "urban agglomeration" refers to the population contained within the contours of a contiguous territory inhabited at urban density levels. It usually incorporates the population in a city, plus that in the contiguous urban, or built-up area.

Chicagoland

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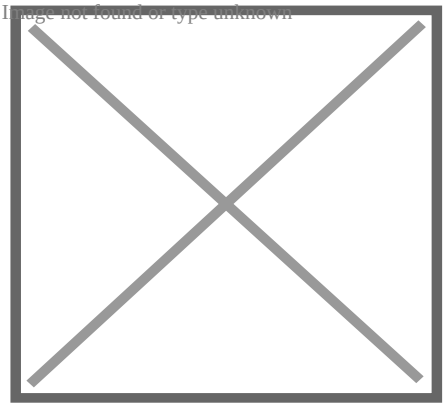

Chicagoland by county and state[13]

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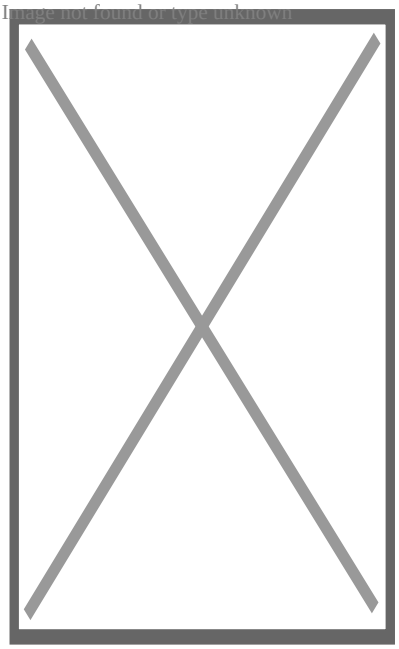

A map of Chicagoland in relation to the states of Wisconsin, Illinois, and Indiana

Chicagoland is an informal name for the Chicago metropolitan area. The term *Chicagoland* has no official definition, and the region is often considered to include areas beyond the corresponding MSA, as well as portions of the greater CSA.[*citation needed*]

Colonel Robert R. McCormick, editor and publisher of the *Chicago Tribune*, usually gets credit for placing the term in common use.[14][15] McCormick's conception of Chicagoland stretched all the way to nearby parts of four states (Indiana, Wisconsin, Michigan, and Iowa).[14] The first usage was in the *Tribune'*s July 27, 1926, front page headline, "Chicagoland's Shrines: A Tour of Discoveries", for an article by reporter James O'Donnell Bennett.[16] He stated that Chicagoland comprised everything in a 200-mile (320 km) radius in every direction and reported on many different places in the area. The *Tribune* was the dominant newspaper in a vast area stretching to the west of the city, and that hinterland was closely tied to the metropolis by rail lines and commercial links.[17]

Today, the *Chicago Tribune'*s usage includes the city of Chicago, the rest of Cook County, eight nearby Illinois counties (Lake, McHenry, DuPage, Kane, Kendall, Grundy, Will, and Kankakee), and the two Indiana counties of Lake and Porter.[18] Illinois Department of Tourism literature uses *Chicagoland* for suburbs in Cook, Lake, DuPage, Kane, and Will counties,[19] treating the city separately. The Chicagoland Chamber of Commerce defines it as all of Cook, DuPage, Kane, Lake, McHenry, and Will counties.[20]

In addition, company marketing programs such as Construction Data Company's[21] "Chicago and Vicinity" region and the Chicago Automobile Trade Association's *"Chicagoland and Northwest Indiana"* advertising campaign are directed at the MSA itself, as well as LaSalle, Winnebago (Rockford), Boone, and Ogle counties in Illinois, in addition to Jasper, Newton, and La Porte counties in Indiana and Kenosha, Racine, and Walworth counties in Wisconsin, and even as far northeast as Berrien County, Michigan. The region is part of the Great Lakes

Megalopolis, containing an estimated 54 million people.[*citation needed*]

Collar counties

[edit]

The term "collar counties" is a colloquialism for the five counties (DuPage, Kane, Lake, McHenry, and Will) of Illinois that border Chicago's Cook County. After Cook County, they are also the next five most populous counties in the state. According to the *Encyclopedia of Chicago*, there is no specifically known origin of the phrase, but it has been commonly used among policy makers, urban planners, and in the media. However, it also notes that as growth has spread beyond these counties, it may have lost some of its usefulness.[22]

Chicago Metropolitan Agency for Planning

[edit]
Main article: Chicago Metropolitan Agency for Planning

Chicago Metropolitan Agency for Planning (CMAP) is an Illinois state agency responsible for transportation infrastructure, land use, and long-term economic development planning for the areas under its jurisdiction within Illinois.[23] The planning area has a population of over 8 million, which includes the following locations in Illinois:[24]

- Cook County
- DuPage County
- Kane County
- Kendall County
- Lake County
- McHenry County
- Will County

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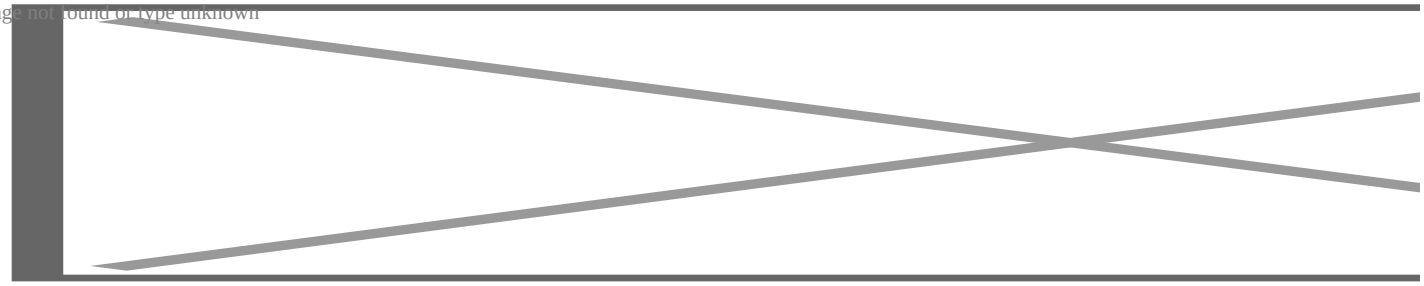

Panorama of North Avenue Beach

Geography and environment

[edit]
Further information: Geography of Chicago

The city of Chicago lies in the Chicago Plain, a flat and broad area characterized by little topographical relief. The few low hills are sand ridges. North of the Chicago Plain, steep bluffs and ravines run alongside Lake Michigan.

Along the southern shore of the Chicago Plain, sand dunes run alongside the lake. The tallest dunes reach up to near 200 feet (61 m) and are found in Indiana Dunes National Park. Surrounding the low plain are bands of moraines in the south and west suburbs. These areas are higher and hillier than the Chicago Plain. A continental divide, separating the Mississippi River watershed from that of the Great Lakes and Saint Lawrence River, runs through the Chicago area.

A 2012 survey of the urban trees and forests in the seven county Illinois section of the Chicago area found that 21% of the land is covered by the tree and shrub canopy, made up of about 157,142,000 trees. The five most common tree species are buckthorn, green ash, boxelder, black cherry, and American elm. These resources perform important functions in carbon storage, water recycling, and energy saving.[25][26]

The Chicago skyline

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Night aerial view of Chicago and vicinity

Demographics

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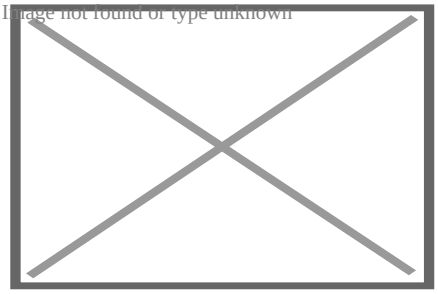

Taken from the ISS on June 23, 2022; downtown Chicago is at the center by the lake.

As of 2022, the metropolitan area had a population of 9,442,159. The population density was 1,312.3 per square mile. The racial makeup was 50.1% Non-Hispanic White, 23.4% were Hispanic, 15.5% were Non-Hispanic African Americans, 7.2% were Asian, 0.1% were Non-Hispanic Native American, 0.4% identified as “some other race,” and 3.2% were non-Hispanic multiracial.[27]

According to 2022 estimates from the American Community Survey, the largest ancestries in the Chicago metro area were Mexican (18%), African (17.7%), German (12.8%), Irish (9.9%), Polish (8%), Italian (5.9%), English (5.2%), Indian (2.7%), Puerto Rican (2.3%), Filipino (1.7%), Swedish (1.5%), and Chinese (1.4%).[28][29][30][31]

The suburbs, surrounded by easily annexed flat ground, have been expanding at a tremendous rate since the early 1960s. Aurora, Elgin, Joliet, and Naperville are noteworthy for being four of the few boomburbs outside the Sun Belt, West Coast and Mountain States regions, and exurban Kendall County ranked as the fastest-growing county (among counties with a population greater than 10,000) in the United States between the years 2000 and 2007.[32]

Settlement patterns in the Chicago metropolitan area tend to follow those in the city proper: the northern and northwestern suburbs are generally affluent and upper-middle class, while the southern suburbs (sometimes known as Chicago Southland) have somewhat lower median incomes and a cost of living, with the exception being the southwest suburbs which contain many upper-middle class areas. Another exception to this is the West Side, which has a somewhat lower median income, but the western suburbs contain many affluent and upper-middle class areas. According to the 2000 Census, DuPage County as a whole had the highest median household income of any county in the Midwestern United States, although there are individual cities and towns in other surrounding counties in the metro that have even higher median incomes.

According to 2022 estimates from the U.S. Census, poverty rates of the largest counties from least poverty to most are as follows: McHenry 4.0%, Dupage 6.7%, Will 6.9%, Kane 7.8%, Lake 8.0%, and Cook 13.6%.[33] However, Cook County, which contains luxury high rises and expensive houses in sections of the city and expensive houses along the waterfront in the North Shore area, would also have the highest percentage of expensive homes in the region.

In an in-depth historical analysis, Keating (2004, 2005) examined the origins of 233 settlements that by 1900 had become suburbs or city neighborhoods of the Chicago metropolitan area. The settlements began as farm centers (41%), industrial towns (30%), residential railroad suburbs (15%), and recreational/institutional centers (13%). Although relations between the different settlement types were at times contentious, there also was cooperation in such undertakings as the construction of high schools.[*citation needed*]

Population

[edit]

As the Chicago metropolitan area has grown, more counties have been partly or totally assimilated with the taking of each decennial census.

Census Area	Area Type	2020 census	2010 census	2000 census	1990 census	1980 Census	1970 census	1960 census	
Chicago-Naperville-Joliet, IL-IN-WI	**Metropolitan**	**9,618,502**	**9,461,105**	**9,098,316**	**8,065,633**	**7,869,542**	**7,612,314**	**6,794,461**	**5**
Cook County, Illinois	Metropolitan	5,275,541	5,194,675	5,376,741	5,105,067	5,253,655	5,492,369	5,129,725	4
DeKalb County, Illinois	Metropolitan	100,420	105,160	88,969	77,932	74,624	71,654	51,714	
DuPage County, Illinois	Metropolitan	932,877	916,924	904,161	781,666	658,835	491,882	313,459	
Grundy County, Illinois	Metropolitan	52,533	50,063	37,535	32,337	30,582	26,535	22,350	
Kane County, Illinois	Metropolitan	516,522	515,269	404,119	317,471	278,405	251,005	208,246	

Kendall County, Illinois	Metropolitan	131,869	114,736	54,544	39,413	37,202	26,374	17,540	
McHenry County, Illinois	Metropolitan	310,229	308,760	260,077	183,241	147,897	111,555	84,210	
Will County, Illinois	Metropolitan	696,355	677,560	502,266	357,313	324,460	249,498	191,617	
Jasper County, Indiana	Metropolitan	32,918	33,478	30,043	24,960	26,138	20,429	18,842	
Lake County, Indiana	Metropolitan	498,700	496,005	484,564	475,594	522,965	546,253	513,269	
Newton County, Indiana	Metropolitan	13,830	14,244	14,566	13,551	14,844	11,606	11,502	
Porter County, Indiana	Metropolitan	173,215	164,343	146,798	128,932	119,816	87,114	60,279	
Lake County, Illinois	Metropolitan	714,342	703,462	644,356	516,418	440,372	382,638	293,656	
Kenosha County, Wisconsin	Metropolitan	169,151	166,426	149,577	128,181	123,137	117,917	100,615	
Kankakee County, Illinois	Combined	107,502	113,449	103,833	96,255	102,926	97,250	92,063	
LaSalle County, Illinois	Combined	109,658	113,924	111,509	106,913	112,003	111,409	110,800	
Bureau County, Illinois	Combined	33,244	34,978	35,503	35,688	39,114	38,541	37,594	
Putnam County, Illinois	Combined	5,637	6,006	6,086	5,730	6,085	5,007	4,570	

LaPorte County, Indiana	Combined	112,417	111,467	110,106	107,066	108,632	105,342	95,111	
Chicago-Naperville-Joliet, IL-IN-WI	**Combined**	**9,986,960**	**9,686,021**	**9,312,255**	**8,385,397**	**8,264,490**	**8,089,421**	**7,204,198**	**5**

Counties highlighted in gray were not included in the MSA for that census. The CSA totals in blue are the totals of all the counties listed above, regardless of whether they were included in the Chicago Combined Statistical Area at the time.[34]

Principal municipalities

[edit]

Over 1,000,000 population

[edit]

- Chicago (2,746,388)

Over 100,000 population

[edit]

- Aurora, Illinois (180,542)
- Joliet, Illinois (150,362)
- Naperville, Illinois (149,540)
- Elgin, Illinois (114,797)

Over 50,000 population

[edit]

- Kenosha, Wisconsin (99,986)
- Waukegan, Illinois (89,321)
- Cicero, Illinois (85,268)
- Schaumburg, Illinois (78,723)

- Evanston, Illinois (78,110)
- Hammond, Indiana (77,879)
- Arlington Heights, Illinois (77,676)
- Bolingbrook, Illinois (73,922)
- Gary, Indiana (69,093)
- Palatine, Illinois (67,908)
- Skokie, Illinois (67,824)
- Des Plaines, Illinois (60,675)
- Orland Park, Illinois (58,703)
- Oak Lawn, Illinois (58,362)
- Berwyn, Illinois (57,250)
- Mount Prospect, Illinois (56,852)
- Tinley Park, Illinois (55,971)
- Oak Park, Illinois (54,583)
- Wheaton, Illinois (53,970)
- Downers Grove, Illinois (50,247)

View of Chicago greater metropolitan region and the dense downtown area from the Willis Tow

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View of Chicago greater metropolitan region and the North branch of the Chicago River from the Willis Tower

Urban areas within

[edit]

Within the boundary of the 16-county Chicago Combined Statistical Area lies the Chicago urban area, as well as 26 smaller urban areas.[35] Some of the urban areas below may partially cross into other statistical areas. Only those situated primarily within the Chicago combined statistical area are listed here.

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Urban areas contained within the Chicago combined statistical area as of the 2020 census:

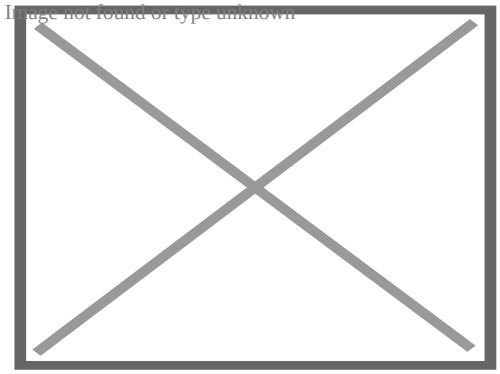
- Urban areas
- Counties in the Chicago MSA
- Counties in the Chicago CSA but not the MSA

Urban area	Population (2020 census)	Land area (sq mi)	Land area (km^2)	Density (population / sq mi)	Density (population / km^2)
Chicago, IL–IN	8,671,746	2,337.89	6,055.09	3,709.2	1,432.1
Round Lake Beach–McHenry–Grayslake, IL–WI	261,835	127.61	330.52	2,051.8	792.2
Kenosha, WI	125,865	56.17	145.48	2,240.8	865.2
Michigan City–La Porte, IN–MI	71,367	49.16	127.32	1,451.7	560.5
Kankakee, IL	66,530	31.66	82.00	2,101.4	811.3
DeKalb, IL	64,736	25.63	66.39	2,525.6	975.1
Valparaiso–Shorewood Forest, IN	51,867	33.64	87.12	1,542.0	595.4
Peru–LaSalle, IL	29,763	21.45	55.56	1,387.4	535.7
Woodstock, IL	25,298	9.31	24.10	2,718.7	1,049.7
Ottawa, IL	20,122	9.99	25.87	2,014.2	777.7
Streator, IL	16,209	8.12	21.04	1,995.3	770.4
Coal City–Braidwood, IL	15,837	10.29	26.65	1,539.4	594.4
Morris, IL	15,740	8.64	22.37	1,822.2	703.5
Lowell, IN	10,747	5.28	13.66	2,037.2	786.6
Manteno, IL	10,437	6.01	15.56	1,736.8	670.6
Harvard, IL	9,376	4.36	11.30	2,148.7	829.6
Princeton, IL	7,979	6.20	16.06	1,287.1	497.0
Marengo, IL	7,509	3.81	9.86	1,971.5	761.2

Lake Holiday, IL	7,313	4.30	11.14	1,700.5	656.6
Mendota, IL	6,918	2.85	7.38	2,426.2	936.8
Wilmington, IL	6,388	3.95	10.23	1,617.3	624.5
McHenry Northwest–Wonder Lake, IL	5,758	2.35	6.08	2,453.6	947.4
Hampshire, IL	5,699	2.72	7.06	2,091.4	807.5
Rensselaer, IN	5,509	3.23	8.37	1,703.9	657.9
Genoa, IL	5,484	2.20	5.69	2,498.0	964.5
Westville, IN	5,189	2.10	5.45	2,466.0	952.1
Marseilles, IL	4,660	2.39	6.19	1,948.4	752.3

Economy

[edit]



Westward view from the Willis Tower in Chicago

Main article: Economy of Chicago
See also: List of companies in the Chicago metropolitan area, Chicagoland Chamber of Commerce, and Economy of Illinois

The Chicago metropolitan area is home to the corporate headquarters of 57 Fortune 1000 companies, including AbbVie Inc., Allstate, Kraft Heinz, McDonald's, Mondelez International, Motorola, United Airlines, Walgreens, and more. The Chicago area also headquarters a wide variety of global financial institutions including Citadel LLC, Discover Financial Services, Morningstar, Inc., CNA Financial, and more. Chicago is home to the largest futures exchange in the world, the Chicago Mercantile Exchange. In March 2008, the Chicago Mercantile Exchange announced its acquisition of NYMEX Holdings Inc, the parent company of the New York Mercantile Exchange and Commodity Exchange. CME'S acquisition of NYMEX was completed in August 2008.

A key piece of infrastructure for several generations was the Union Stock Yards of Chicago, which from 1865 until 1971 penned and slaughtered millions of cattle and hogs into standardized cuts of beef and pork. This prompted poet Carl Sandburg to describe Chicago

as the "Hog Butcher for the World".[36]

The Chicago area, meanwhile, began to produce significant quantities of telecommunications gear, electronics, steel, crude oil derivatives, automobiles, and industrial capital goods.

By the early 2000s, Illinois' economy had moved toward a dependence on high-value-added services, such as financial trading, higher education, logistics, and health care. In some cases, these services clustered around institutions that hearkened back to Illinois's earlier economies. For example, the Chicago Mercantile Exchange, a trading exchange for global derivatives, had begun its life as an agricultural futures market.

In 2007, the area ranked first among U.S. metro areas in the number of new and expanded corporate facilities.[37] It ranked third in 2008, behind the Houston–Sugar Land–Baytown and Dallas–Fort Worth metropolitan areas,[38] and ranked second behind the New York metropolitan area in 2009.[39]

The Wall Street Journal summarized the Chicago area's economy in November 2006 with the comment that "Chicago has survived by repeatedly reinventing itself."[40]

Transportation

[edit]

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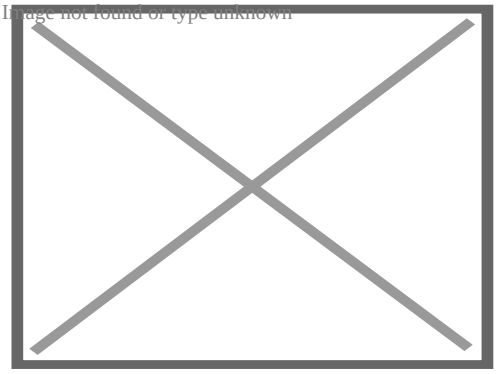

O'Hare Airport

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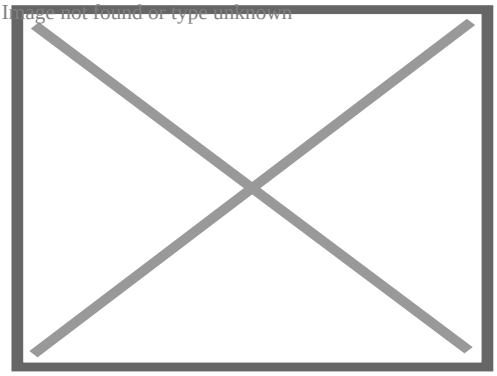

Chicago 'L' in the Loop

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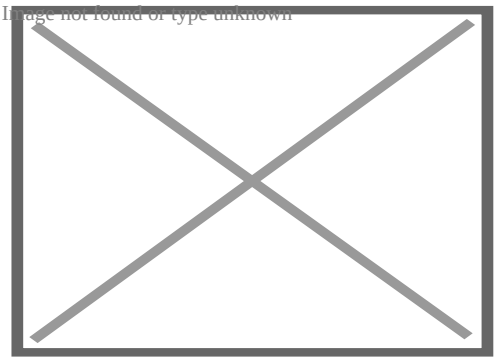

Metra surface rail

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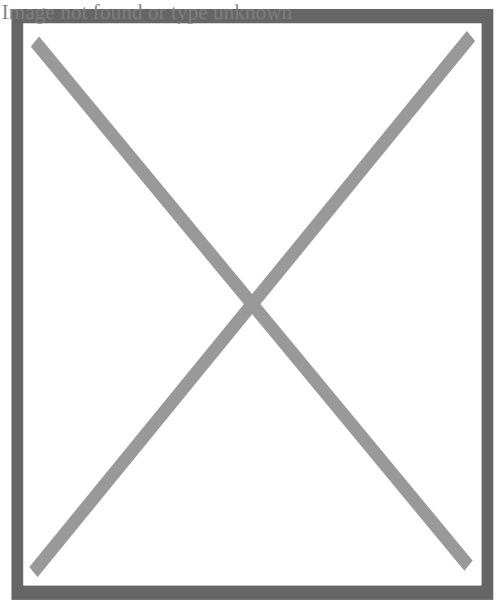


The Eisenhower Expressway with the Chicago Transit Authority Blue Line tracks and the non-revenue ramp that leads to the Pink Line

Main articles: Transportation in Chicago and Roads and freeways in Chicago

Major airports

[edit]

- Chicago O'Hare International Airport (ORD)
- Chicago Midway International Airport (MDW)
- Milwaukee Mitchell International Airport (MKE) (located in the adjacent Milwaukee metropolitan area)
- Chicago Rockford International Airport (RFD) (located in the adjacent Rockford metropolitan area)
- Gary/Chicago International Airport (GYY)

Commercial ports

[edit]

- Port of Chicago
- Port of Indiana-Burns Harbor

Transit systems

[edit]

Commercial freight

[edit]

Chicago has been at the center of the United States' railroad network since the 19th century. Almost all Class I railroads serve the area, the most in North America.[41]

Passenger

[edit]

- Chicago Transit Authority trains, locally referred to as "the 'L' ", (after "elevated train") serving Chicago and the near suburbs
- Pace Suburban Bus operates suburban bus and regional vanpool, paratransit, and ride-matching services in the Chicagoland region.
- Metra run by the Northeast Illinois Regional Commuter Railroad Corporation:
  - 4 lines serving southern Cook County and Will County
  - 3 lines serving western Cook County, DuPage County, and Kane County
  - 2 lines serving northern Cook County and Lake County
  - 1 line serving northern Cook County, Lake County, and Kenosha County
  - 1 line serving northwestern Cook County and McHenry County
- South Shore Line shares the Metra Electric Line in Illinois and connects Chicago to Gary, Michigan City, and ending at South Bend.

- Amtrak operates Union Station which is the major Amtrak passenger rail hub with connections to Metra and the within a few blocks of connections to several 'L' lines. Amtrak also operates a connecting station out of Joliet.

Major highways

[edit]

Interstates

[edit]

- Interstate 41 (I-41) runs concurrently with Interstate 94 from the northern terminus of the Tri-State Tollway to Milwaukee.
- Interstate 55 (I-55) is the Adlai Stevenson Expy.
- I-355 is the Veterans Memorial Tollway (formerly North-South Tollway).
- I-57 is unofficially the "West Leg" of the Dan Ryan Expy.
- I-65 has no name, whether official or unofficial.
- I-80 is officially called the Borman Expy (cosigned with I-94), Kingery Expy (cosigned with I-94 for 3 miles), Tri-State Tollway (cosigned with I-294 for 4 miles) and is unofficially called the Moline Expy west of I-294.
- I-88 is the Ronald Reagan Memorial Tollway (formerly East-West Tollway)
- I-90 is locally known as Jane Addams Tollway (formerly Northwest Tollway), John F. Kennedy Expy (cosigned with I-94), Dan Ryan Expy (cosigned with I-94), and Chicago Skyway Toll Bridge.

- I-94 is Tri-State Tollway in Lake County, Edens Spur, Edens Expy, John F. Kennedy Expy (cosigned with I-90), Dan Ryan Expy (cosigned with I-90), Bishop Ford Frwy (formerly Calumet Expy), Kingery Expy (cosigned with I-80) and Borman Expy (cosigned with I-80).
- I-190 is the John F. Kennedy Expy spur heading into Chicago-O'Hare Int'l Airport.
- I-290 is the Dwight D. Eisenhower Expy.
- I-294 is the Tri-State Tollway.

Other main highways

[edit]

- US Routes in the Illinois part of the area include: US 6, US 12, US 14, US 20, US 30, US 34, US 41, US 45, and US 52.

- Illinois Route 53, an arterial north–south state highway running through Grundy, Will, DuPage, Cook and Lake counties
- Historic US Route 66's eastern terminus is in Chicago.

Major corridors

[edit]

In addition to the Chicago Loop, the metro area is home to a few important subregional corridors of commercial activities. Among them are:

- Illinois Technology and Research Corridor, along the Ronald Reagan Memorial Tollway (Interstate 88)
- Golden Corridor, along the Jane Addams Memorial Tollway (Interstate 90)
- Lakeshore Corridor, along the Edens Expressway and Tri-State Tollway

Culture

[edit]

Sports

[edit]
Main article: Sports in Chicago

Listing of the professional sports teams in the Chicago metropolitan area

Major league professional teams:

- Major League Baseball (MLB)
  - Chicago Cubs
  - Chicago White Sox
- National Football League (NFL)
  - Chicago Bears
- National Basketball Association (NBA)
  - Chicago Bulls
- National Hockey League (NHL)
  - Chicago Blackhawks
- Major League Soccer (MLS)
  - Chicago Fire FC

Other professional teams:

- Women's National Basketball Association (WNBA)
  - Chicago Sky
- National Women's Soccer League (NWSL)
  - Chicago Stars FC
- American Association of Professional Baseball (AA)
  - Chicago Dogs
  - Kane County Cougars
  - Gary SouthShore RailCats
- American Hockey League (AHL)
  - Chicago Wolves
- NBA G League (NBAGL)
  - Windy City Bulls
- Major League Rugby (MLR)
  - Chicago Hounds

The Chicagoland Speedway oval track has hosted NASCAR Cup Series and IndyCar Series races. The Chicago Marathon is one of the World Marathon Majors. The Western Open and BMW Championship are PGA Tour tournaments that have been held primarily at golf courses near Chicago.

NCAA Division I College Sports Teams:

- Atlantic 10 Conference
  - Loyola University Chicago Ramblers
- Big East Conference
  - DePaul University Blue Demons
- Big Ten Conference
  - Northwestern University Wildcats (Evanston)
- Mid-American Conference
  - Northern Illinois University Huskies (DeKalb)
- Missouri Valley Conference
  - University of Illinois Chicago Flames
  - Valparaiso University Beacons (Valparaiso, IN)
- Northeast Conference
  - Chicago State University Cougars

Cuisine

[edit]
Further information: Chicago § Cuisine

- Chicago-style hot dog

- Chicago-style pizza
- Italian beef
- Caramel popcorn

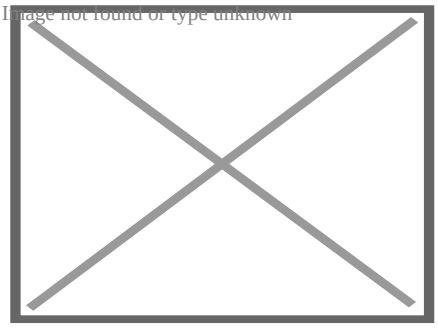
Media

[edit]
Main article: Media in Chicago

The two main newspapers are the *Chicago Tribune* and the *Chicago Sun-Times*. Local television channels broadcasting to the Chicago market include WBBM-TV 2 (CBS), WMAQ-TV 5 (NBC), WLS-TV 7 (ABC), WGN-TV 9 (Ind), WTTW 11 (PBS), MeTV 23, WCIU 26 (CW), WFLD 32 (FOX), WCPX-TV 38 (Ion), WSNS-TV 44 (Telemundo), WPWR-TV 50 (MyNetworkTV), and WJYS-TV 62 (The Way). Radio stations serving the area include: WBBM (AM), WBEZ, WGN (AM), WMBI, WLS (AM), and WSCR.

Education

[edit]
Further information: List of school districts in Illinois, List of school districts in Indiana, and List of colleges and universities in Chicago



Whitney M. Young Magnet High School in Chicago

Elementary and secondary education within the Chicago metropolitan area is provided by dozens of different school districts, of which by far the largest is the Chicago Public Schools with 400,000 students.[42] Numerous private and religious school systems are also found in the region, as well as a growing number of charter schools. Racial inequalities in education in the region remain widespread, often breaking along district boundaries;[43] for instance, educational prospects vary widely for students in the Chicago Public Schools compared to those in some neighboring suburban schools.[44]

Historically, the Chicago metropolitan area has been at the center of a number of national educational movements, from the free-flowing Winnetka Plan to the regimented Taylorism of

the Gary Plan.[45] In higher education, University of Chicago founder William Rainey Harper was a leading early advocate of the junior college movement; Joliet Junior College is the nation's oldest continuously operating junior college today.[46] Later U of C president Robert Maynard Hutchins was central to the Great Books movement, and programs of dialogic education arising from that legacy can be found today at the U of C, at Shimer College,[47] and in the City Colleges of Chicago and Oakton College in the Northwest suburbs.[48]

Area codes

[edit]
Main article: List of Illinois area codes

From 1947 until 1988, the Illinois portion of the Chicago metro area was served by a single area code, 312, which abutted the 815 area code. In 1988 the 708 area code was introduced and the 312 area code became exclusive to the city of Chicago.

It became common to call suburbanites "708'ers", in reference to their area code.

The 708 area code was partitioned in 1996 into three area codes, serving different portions of the metro area: 630, 708, and 847.

At the same time that the 708 area code was running out of phone numbers, the 312 area code in Chicago was also exhausting its supply of available numbers. As a result, the city of Chicago was divided into two area codes, 312 and 773. Rather than divide the city by a north–south area code, the central business district retained the 312 area code, while the remainder of the city took the new 773 code.

In 2002, the 847 area code was supplemented with the overlay area code 224. In February 2007, the 815 area code (serving outlying portions of the metro area) was supplemented with the overlay area code 779. In October 2007, the overlay area code 331 was implemented to supplement the 630 area with additional numbers.

Plans are in place for overlay codes in the 708, 773, and 312 regions as those area codes become exhausted in the future.

- 312 Chicago - City (The Loop and central neighborhoods, e.g. the Near North Side)
- 773 Chicago - City (Everywhere else within the city limits, excluding central area)
- 872 Chicago - City (overlay for 312 & 773, effective November 7, 2009)
- 847/224 (North and Northwest Suburbs)
- 630/331 (Outer Western Suburbs)
- 708 (South and Near West Suburbs)
- 815/779 (Rockford & Joliet: Far Northwest/Southwest Suburbs)
- 219 (Northwest Indiana)
- 574 (North-central Indiana)

- 262 (Southeast Wisconsin surrounding Milwaukee County)

Proposed overlays

[edit]

- 464 overlay for 708 (January 21, 2022, rollout)

See also

[edit]
Portals:

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- Image not found or type unknown Illinois
- Image not found or type unknown United States

- Index of Illinois-related articles

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External links

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Chicago metropolitan area at Wikipedia's sister projects

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- *Encyclopedia of Chicago* (2004), comprehensive coverage of city and suburbs, past and present
- U.S. Census Urbanized Area Outline Map (2000)
- Chicago-Naperville-Michigan City, IL-IN-WI Combined Statistical Area (2012) map
- Illinois CBSAs and Counties (2013) map
- U.S. Census Bureau Chicago city, Illinois QuickFacts
- Metropolitan and Micropolitan Statistical Areas
- About Metropolitan and Micropolitan Statistical Areas
- History of Metropolitan Areas
- Metropolitan and Micropolitan Statistical Areas Population Totals and Components of Change: 2010–2019

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Chicago metropolitan area

Chicago landsat image

Major city

- **Chicago**

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Cities (over 30,000 in 2020)	○ Aurora ○ Berwyn ○ Calumet City ○ Crown Point ○ Crystal Lake ○ DeKalb ○ Des Plaines ○ Elgin ○ Elmhurst ○ Evanston ○ Gary ○ Hammond ○ Highland Park ○ Joliet ○ Kenosha ○ Naperville ○ North Chicago ○ Park Ridge ○ Portage ○ St. Charles ○ Valparaiso ○ Waukegan ○ Wheaton

Towns and villages (over 30,000 in 2020)	○ Addison ○ Arlington Heights ○ Bartlett ○ Bolingbrook ○ Buffalo Grove ○ Carol Stream ○ Carpentersville ○ Cicero ○ Downers Grove ○ Elk Grove Village ○ Glendale Heights ○ Glenview ○ Grayslake ○ Gurnee ○ Hanover Park ○ Hoffman Estates ○ Lombard ○ Merrillville ○ Mount Prospect ○ Mundelein ○ Niles ○ Northbrook ○ Oak Lawn ○ Oak Park ○ Orland Park ○ Oswego ○ Palatine ○ Plainfield ○ Romeoville ○ Schaumburg ○ Skokie ○ Streamwood ○ Tinley Park ○ Wheeling ○ Wonder Lake ○ Woodridge

Counties	○ Cook ○ DeKalb ○ DuPage ○ Grundy ○ Jasper ○ Kane ○ Kankakee ○ Kendall ○ Kenosha ○ Lake, IL ○ Lake, IN ○ McHenry ○ Newton ○ Porter ○ Will
Regions	○ Great Lakes ○ Northern Illinois ○ Northern Indiana
Sub-regions	○ Chicago Southland ○ Eastern Ridges and Lowlands ○ Fox Valley (Illinois) ○ Golden Corridor ○ Illinois Technology and Research Corridor ○ North Shore (Chicago) ○ Northwest Indiana

Illinois, United States

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State of Illinois

Springfield (capital)

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- Science and technology
- Sister cities
- Society
- Sports
- Symbols
- Tourism
- Transportation
- Windmills

Regions

- American Bottom
- Bloomington–Normal metropolitan area
- Central Illinois
- Champaign–Urbana metropolitan area
- Chicago metropolitan area
- Collar counties
- Corn Belt
- Driftless Area
- Forgottonia
- Fox Valley
- Illinois–Indiana–Kentucky tri-state area
- Metro East
- Metro Lakeland
- Mississippi Alluvial Plain
- North Shore
- Northern Illinois
- Northwestern Illinois
- Peoria metropolitan area
- Quad Cities
- River Bend
- Rockford metropolitan area
- Southern Illinois
- Wabash Valley

Municipalities	○ Alton/Granite City/Edwardsville ○ Arlington Heights/Palatine ○ Aurora/Naperville/Oswego/Plainfield ○ Bartlett/Hanover Park/Streamwood ○ Belleville/East St. Louis/Collinsville/O'Fallon ○ Berwyn/Cicero ○ Bloomington/Normal ○ Bolingbrook/Romeoville ○ Buffalo Grove/Wheeling ○ Calumet City ○ Canton ○ Carbondale ○ Carol Stream/Glendale Heights ○ Centralia ○ Champaign/Urbana ○ Charleston/Mattoon ○ Chicago ○ Chicago Heights ○ Crystal Lake/Algonquin ○ Danville ○ Decatur ○ DeKalb/Sycamore ○ Des Plaines/Mount Prospect/Park Ridge ○ Dixon ○ Downers Grove/Woodridge ○ Effingham ○ Elgin/Carpentersville ○ Elmhurst/Lombard/Addison ○ Evanston/Skokie ○ Freeport ○ Galesburg ○ Glenview/Northbrook ○ Harrisburg ○ Jacksonville ○ Joliet ○ Kankakee/Bradley/Bourbonnais ○ Lincoln ○ Macomb ○ Marion/Herrin ○ Moline/East Moline/Rock Island ○ Mount Vernon ○ Mundelein ○ Oak Lawn ○ Oak Park ○ Orland Park/Tinley Park ○ Ottawa/Streator/LaSalle/Peru ○ Peoria/Pekin/East Peoria/Morton/Washington

- Adams
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- Bond
- Boone
- Brown
- Bureau
- Calhoun
- Carroll
- Cass
- Champaign
- Christian
- Clark
- Clay
- Clinton
- Coles
- Cook
- Crawford
- Cumberland
- DeKalb
- DeWitt
- Douglas
- DuPage
- Edgar
- Edwards
- Effingham
- Fayette
- Ford
- Franklin
- Fulton
- Gallatin
- Greene
- Grundy
- Hamilton
- Hancock
- Hardin
- Henderson
- Henry
- Iroquois
- Jackson
- Jasper
- Jefferson
- Jersey
- Jo Daviess
- Johnson
- Kane
- Kankakee
- Kendall

flag **Illinois portal**

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State of Indiana

Indianapolis (capital)

Topics

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  - climate change
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- Supreme Court
- Taxation

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- Abortion
- Culture
- Crime
- Demographics
- Economy
- Education
- Gun laws
- Gambling
- Homelessness
- LGBT rights
- Politics

Largest cities	○ Anderson ○ Bloomington ○ Carmel ○ Columbus ○ Crown Point ○ Elkhart ○ Evansville ○ Fishers ○ Fort Wayne ○ Gary ○ Goshen ○ Greenwood ○ Hammond ○ Indianapolis ○ Jeffersonville ○ Kokomo ○ Lafayette ○ Lawrence ○ Michigan City ○ Mishawaka ○ Muncie ○ New Albany ○ Noblesville ○ Portage ○ Richmond ○ South Bend ○ Terre Haute ○ Valparaiso ○ Westfield ○ West Lafayette
Largest towns	○ Avon ○ Brownsburg ○ Clarksville ○ Highland ○ Merrillville ○ Munster ○ Plainfield ○ Saint John ○ Schererville ○ Zionsville

Counties	○ Adams ○ Allen ○ Bartholomew ○ Benton ○ Blackford ○ Boone ○ Brown ○ Carroll ○ Cass ○ Clark ○ Clay ○ Clinton ○ Crawford ○ Daviess ○ Dearborn ○ Decatur ○ DeKalb ○ Delaware ○ Dubois ○ Elkhart ○ Fayette ○ Floyd ○ Fountain ○ Franklin ○ Fulton ○ Gibson ○ Grant ○ Greene ○ Hamilton ○ Hancock ○ Harrison ○ Hendricks ○ Henry ○ Howard ○ Huntington ○ Jackson ○ Jasper ○ Jay ○ Jefferson ○ Jennings ○ Johnson ○ Knox ○ Kosciusko ○ LaGrange ○ Lake ○ LaPorte ○ Lawrence

- Central Indiana
  - East Central Indiana
  - Wabash Valley
- Northern Indiana
  - Northwest Indiana
    - Chicago metropolitan area
  - Michiana
- Southern Indiana
  - Indiana Uplands
  - Kentuckiana
  - Southwestern Indiana

Regions

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State of Wisconsin

Madison (capital)

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  - Islands
  - Lakes
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Topics

Society	○ Abortion ○ Administrative divisions ○ Cannabis ○ Crime ○ Culture ○ Demographics ○ Economy ○ Education ○ Gun laws ○ LGBT rights ○ Politics
Regions	○ Apostle Islands ○ Central Plain ○ Chippewa Valley ○ Door Peninsula ○ Driftless Area ○ Eastern Ridges and Lowlands ○ Fox River Valley ○ Great River Road ○ Lake Superior Lowland ○ Northern Highland ○ Western Upland
Major metropolitan areas (pop. over 500,000)	○ Chicago metropolitan area ○ Madison metropolitan area ○ Milwaukee metropolitan area ○ Twin Cities metropolitan area

Largest cities (pop. over 50,000)	○ Appleton ○ Eau Claire ○ Green Bay ○ Janesville ○ Kenosha ○ La Crosse ○ Madison ○ Milwaukee ○ Oshkosh ○ Racine ○ Waukesha ○ West Allis

Smaller cities (pop. 15,000 to 50,000)	○ Beaver Dam ○ Beloit ○ Brookfield ○ Cudahy ○ De Pere ○ Fitchburg ○ Fond du Lac ○ Franklin ○ Greenfield ○ Hartford ○ Hudson ○ Kaukauna ○ Manitowoc ○ Marshfield ○ Menasha ○ Menomonie ○ Mequon ○ Middleton ○ Muskego ○ Neenah ○ New Berlin ○ Oak Creek ○ Oconomowoc ○ Onalaska ○ River Falls ○ Sheboygan ○ South Milwaukee ○ Stevens Point ○ Sun Prairie ○ Superior ○ Watertown ○ Wausau ○ Wauwatosa ○ West Bend ○ Wisconsin Rapids

Largest villages (pop. over 15,000)	○ Ashwaubenon ○ Bellevue ○ Caledonia ○ Fox Crossing ○ Germantown ○ Howard ○ Menomonee Falls ○ Mount Pleasant ○ Pleasant Prairie

Counties	○ Adams ○ Ashland ○ Barron ○ Bayfield ○ Brown ○ Buffalo ○ Burnett ○ Calumet ○ Chippewa ○ Clark ○ Columbia ○ Crawford ○ Dane ○ Dodge ○ Door ○ Douglas ○ Dunn ○ Eau Claire ○ Florence ○ Fond du Lac ○ Forest ○ Grant ○ Green ○ Green Lake ○ Iowa ○ Iron ○ Jackson ○ Jefferson ○ Juneau ○ Kenosha ○ Kewaunee ○ La Crosse ○ Lafayette ○ Langlade ○ Lincoln ○ Manitowoc ○ Marathon ○ Marinette ○ Marquette ○ Menominee ○ Milwaukee ○ Monroe ○ Oconto ○ Oneida ○ Outagamie ○ Ozaukee ○ Pepin

flag **Wisconsin portal**

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World's 50 most-populous urban areas

1. Tokyo
2. Jakarta
3. Delhi
4. Guangzhou–Foshan
5. Mumbai
6. Manila
7. Shanghai
8. Seoul
9. Cairo
10. Mexico City
11. Kolkata
12. São Paulo
13. New York
14. Karachi
15. Dhaka
16. Bangkok
17. Beijing
18. Moscow
19. Shenzhen
20. Buenos Aires

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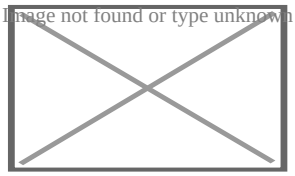
Great Lakes megalopolis as defined by the RPA

Includes all metropolitan areas that have a population of 150,000 or greater according to the most recent national census.

Great Lakes region cities

- Brantford
- Buffalo–Niagara Falls
  - Buffalo
  - Niagara Falls
- Chicago
  - city
- Cleveland
  - city
- Detroit
  - city
- Duluth–Superior
  - Duluth
  - Superior
- Erie
  - city
- Grand Rapids
  - city
- Guelph
- Green Bay
  - city
- Hamilton
- Holland
- Kalamazoo
  - city
- Kenosha
- Lansing
  - city
- London
- Milwaukee
  - city
- Muskegon
- Niagara Region
  - St. Catharines
  - Niagara Falls
  - Welland
- Niles
- Oshawa
- Rochester, New York
  - city
- South Bend
  - city
- Thunder Bay
- Toledo
  - city
- Toronto
  - city
- Traverse City



- Akron
  - city
- Altoona
- Ann Arbor
- Barrie
- Bloomington, Indiana
  - city
- Bloomington–Normal
  - Bloomington, Illinois
  - Normal
- Canton
  - city
- Champaign
  - city
- Cincinnati
  - city
- Columbus
  - city
- Dayton
  - city
- Eau Claire
  - city
- Elkhart
- Evansville
  - city
- Fargo
  - city
- Flint
- Fort Wayne
  - city
- Fox Cities
  - Appleton
  - Oshkosh
- Indianapolis
  - city
- Jackson
- Janesville–Beloit
- Kankakee
  - city
- Kingston
- La Crosse–Onalaska
  - La Crosse
  - Onalaska
- Lafayette
  - city
- Madison
  - city

Cities of states south of region	○ Elizabethtown
	  ○ city
	○ Kansas City
	  ○ city
	○ Louisville
	  ○ city
	○ St. Louis
	  ○ city
	○ Topeka
	  ○ city
	○ Wheeling
	  ○ city

Other metro-regions	○ Quebec City–Windsor Corridor ○ Golden Horseshoe ○ Greater Toronto and Hamilton Area ○ Detroit–Windsor ○ Greater Pittsburgh ○ Metro East

Other megaregions

Authority control databases	**Edit this at Wikidata** Image not found or type unknown
International	○ VIAF ○ FAST
National	○ Germany ○ United States ○ Israel

About bedrock

For other uses, see Bedrock (disambiguation).
"Subsurface" redirects here. For other uses, see Subsurface (disambiguation).

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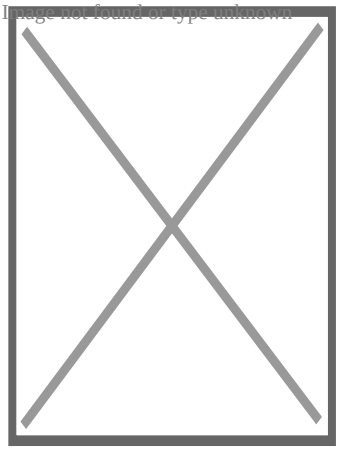

Soil with broken rock fragments overlying bedrock, Sandside Bay, Caithness, Scotland

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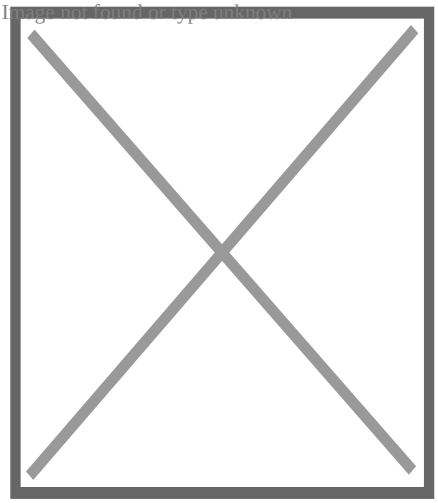

Soil profile with bedrock labeled R

In geology, **bedrock** is solid rock that lies under loose material (regolith) within the crust of Earth or another terrestrial planet.

Definition

[edit]

Bedrock is the solid rock that underlies looser surface material.[1] An exposed portion of bedrock is often called an outcrop.[2] The various kinds of broken and weathered rock material, such as soil and subsoil, that may overlie the bedrock are known as regolith.[3][4]

Engineering geology

[edit]

The surface of the bedrock beneath the soil cover (regolith) is also known as *rockhead* in engineering geology,[5][6] and its identification by digging, drilling or geophysical methods is an important task in most civil engineering projects. Superficial deposits can be very thick, such that the bedrock lies hundreds of meters below the surface.[7]

Weathering of bedrock

[edit]

Exposed bedrock experiences weathering, which may be physical or chemical, and which alters the structure of the rock to leave it susceptible to erosion. Bedrock may also experience subsurface weathering at its upper boundary, forming saprolite.[8]

Geologic map

[edit]

A geologic map of an area will usually show the distribution of differing bedrock types, rock that would be exposed at the surface if all soil or other superficial deposits were removed. Where superficial deposits are so thick that the underlying bedrock cannot be reliably mapped, the superficial deposits will be mapped instead (for example, as alluvium).[9]

See also

[edit]

- icon Geology portal
- icon Geography portal
- Maps portal
- Minerals portal

References

[edit]

1. ^ *Jackson, Julia A., ed. (1997). "Bedrock". Glossary of geology (4th ed.). Alexandria, Virginia: American Geological Institute. ISBN 0922152349.*
2. ^ Jackson 1997, "Outcrop".
3. ^ Jackson 1997, "Regolith".
4. ^ *Allaby, Michael (2013). "Regolith". A dictionary of geology and earth sciences (4th ed.). Oxford: Oxford University Press. ISBN 9780199653065.*

5. **^** *Price, David George (2009). "The Basis of Engineering Geology". In de Freitas, Michael H. (ed.). Engineering Geology: Principles and Practice. Springer. p. 16. ISBN 978-3540292494.*
6. **^** *McLean, A.C.; Gribble, C.D. (9 September 1985). Geology for Civil Engineers (Second ed.). CRC Press. p. 113. ISBN 978-0419160007.*
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9. **^** *"Digital Geology – Bedrock geology theme". British Geological Survey. Archived from the original on 13 December 2009. Retrieved 12 November 2009.*

Further reading

[edit]

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External links

[edit]

- Image not found or type unknown Media related to Bedrock at Wikimedia Commons

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Geotechnical engineering

Offshore geotechnical engineering

Investigation and instrumentation

Field (*in situ*)

- Core drill
- Cone penetration test
- Geo-electrical sounding
- Permeability test
- Load test
  - Static
  - Dynamic
  - Statnamic
- Pore pressure measurement
  - Piezometer
  - Well
- Ram sounding
- Rock control drilling
- Rotary-pressure sounding
- Rotary weight sounding
- Sample series
- Screw plate test
- Deformation monitoring
  - Inclinometer
  - Settlement recordings
- Shear vane test
- Simple sounding
- Standard penetration test
- Total sounding
- Trial pit
- Visible bedrock
- Nuclear densometer test
- Exploration geophysics
- Crosshole sonic logging

Soil	Types	○ Clay ○ Silt ○ Sand ○ Gravel ○ Peat ○ Loam ○ Loess
	Properties	○ Hydraulic conductivity ○ Water content ○ Void ratio ○ Bulk density ○ Thixotropy ○ Reynolds' dilatancy ○ Angle of repose ○ Friction angle ○ Cohesion ○ Porosity ○ Permeability ○ Specific storage ○ Shear strength ○ Sensitivity

Structures (Interaction)	Natural features	○ Topography ○ Vegetation ○ Terrain ○ Topsoil ○ Water table ○ Bedrock ○ Subgrade ○ Subsoil

	Earthworks	○ Shoring structures
		  ○ Retaining walls
		  ○ Gabion
		  ○ Ground freezing
		  ○ Mechanically stabilized earth
		  ○ Pressure grouting
		  ○ Slurry wall
		  ○ Soil nailing
		  ○ Tieback
		○ Land development
		○ Landfill
		○ Excavation
		○ Trench
		○ Embankment
		○ Cut
		○ Causeway
		○ Terracing
		○ Cut-and-cover
		○ Cut and fill
		○ Fill dirt
		○ Grading
		○ Land reclamation
		○ Track bed
		○ Erosion control
		○ Earth structure
		○ Expanded clay aggregate
		○ Crushed stone
		○ Geosynthetics
		  ○ Geotextile
		  ○ Geomembrane
		  ○ Geosynthetic clay liner
		  ○ Cellular confinement
		○ Infiltration

	Foundations	○ Shallow ○ Deep

Mechanics	Forces	○ Effective stress ○ Pore water pressure ○ Lateral earth pressure ○ Overburden pressure ○ Preconsolidation pressure

	Phenomena/ problems	○ Permafrost
		○ Frost heaving
		○ Consolidation
		○ Compaction
		○ Earthquake
		  ○ Response spectrum
		  ○ Seismic hazard
		  ○ Shear wave
		○ Landslide analysis
		  ○ Stability analysis
		  ○ Mitigation
		  ○ Classification
		  ○ Sliding criterion
		  ○ Slab stabilisation
		○ Bearing capacity * Stress distribution in soil

Numerical analysis software	○ SEEP2D ○ STABL ○ SVFlux ○ SVSlope ○ UTEXAS ○ Plaxis	

Related fields

- Geology
- Geochemistry
- Petrology
- Earthquake engineering
- Geomorphology
- Soil science
- Hydrology
- Hydrogeology
- Biogeography
- Earth materials
- Archaeology
- Agricultural science
  - Agrology

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About concrete slab

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Suspended slab under construction, with the formwork still in place

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Suspended slab formwork and rebar in place, ready for concrete pour.

A **concrete slab** is a common structural element of modern buildings, consisting of a flat, horizontal surface made of cast concrete. Steel-reinforced slabs, typically between 100 and 500 mm thick, are most often used to construct floors and ceilings, while thinner *mud slabs* may be used for exterior paving (see below).[1][2]

In many domestic and industrial buildings, a thick concrete slab supported on foundations or directly on the subsoil, is used to construct the ground floor. These slabs are generally classified as *ground-bearing* or *suspended*. A slab is ground-bearing if it rests directly on the foundation, otherwise the slab is suspended.[3] For multi-story buildings, there are several common slab designs (

see § Design for more types):

- Beam and block, also referred to as *rib and block*, is mostly used in residential and industrial applications. This slab type is made up of pre-stressed beams and hollow blocks and are temporarily propped until set, typically after 21 days.[4]
- A hollow core slab which is precast and installed on site with a crane
- In high rise buildings and skyscrapers, thinner, pre-cast concrete slabs are slung between the steel frames to form the floors and ceilings on each level. Cast in-situ slabs are used in high rise buildings and large shopping complexes as well as houses. These in-situ slabs are cast on site using shutters and reinforced steel.

On technical drawings, reinforced concrete slabs are often abbreviated to "r.c.c. slab" or simply "r.c.". Calculations and drawings are often done by structural engineers in CAD software.

Thermal performance

[edit]

Energy efficiency has become a primary concern for the construction of new buildings, and the prevalence of concrete slabs calls for careful consideration of its thermal properties in order to minimise wasted energy.[5] Concrete has similar thermal properties to masonry products, in that it has a relatively high thermal mass and is a good conductor of heat.

In some special cases, the thermal properties of concrete have been employed, for example as a heatsink in nuclear power plants or a thermal buffer in industrial freezers.[6]

Thermal conductivity

[edit]

Thermal conductivity of a concrete slab indicates the rate of heat transfer through the solid mass by conduction, usually in regard to heat transfer to or from the ground. The coefficient of thermal conductivity, *k*, is proportional to density of the concrete, among other factors.[5] The primary influences on conductivity are moisture content, type of aggregate, type of cement, constituent proportions, and temperature. These various factors complicate the theoretical evaluation of a *k*-value, since each component has a different conductivity when isolated, and the position and proportion of each components affects the overall conductivity. To simplify this, particles of aggregate may be considered to be suspended in the homogeneous cement. Campbell-Allen and Thorne (1963) derived a formula for the theoretical thermal conductivity of concrete.[6] In practice this formula is rarely applied, but remains relevant for theoretical use. Subsequently, Valore (1980) developed another formula in terms of overall density.[7] However, this study concerned hollow concrete blocks and its results are unverified for concrete slabs.

The actual value of *k* varies significantly in practice, and is usually between 0.8 and 2.0 W m $^{?1}$ K$^{?1}$.[8] This is relatively high when compared to other materials, for example the conductivity of wood may be as low as 0.04 W m$^{?1}$ K$^{?1}$. One way of mitigating the effects of thermal conduction is to introduce insulation (

see § Insulation).

Thermal mass

[edit]

The second consideration is the high thermal mass of concrete slabs, which applies similarly to walls and floors, or wherever concrete is used within the thermal envelope. Concrete has a relatively high thermal mass, meaning that it takes a long time to respond to changes in ambient temperature.[9] This is a disadvantage when rooms are heated intermittently and require a quick response, as it takes longer to warm the entire building, including the slab. However, the high thermal mass is an advantage in climates with large daily temperature swings, where the slab acts as a regulator, keeping the building cool by day and warm by night.

Typically concrete slabs perform better than implied by their R-value.[5] The R-value does not consider thermal mass, since it is tested under constant temperature conditions. Thus, when a concrete slab is subjected to fluctuating temperatures, it will respond more slowly to these changes and in many cases increase the efficiency of a building.[5] In reality, there are many factors which contribute to the effect of thermal mass, including the depth and composition of the slab, as well as other properties of the building such as orientation and windows.

Thermal mass is also related to thermal diffusivity, heat capacity and insulation. Concrete has low thermal diffusivity, high heat capacity, and its thermal mass is negatively affected by insulation (e.g. carpet).[5]

Insulation

[edit]

Without insulation, concrete slabs cast directly on the ground can cause a significant amount of extraneous energy transfer by conduction, resulting in either lost heat or unwanted heat. In modern construction, concrete slabs are usually cast above a layer of insulation such as expanded polystyrene, and the slab may contain underfloor heating pipes.[10] However, there are still uses for a slab that is not insulated, for example in outbuildings which are not heated or cooled to room temperature (

see § Mud slabs). In these cases, casting the slab directly onto a substrate of aggregate will maintain the slab near the temperature of the substrate throughout the year, and can prevent both freezing and overheating.

A common type of insulated slab is the beam and block system (mentioned above) which is modified by replacing concrete blocks with expanded polystyrene blocks.[11] This not only allows for better insulation but decreases the weight of slab which has a positive effect on load bearing walls and foundations.

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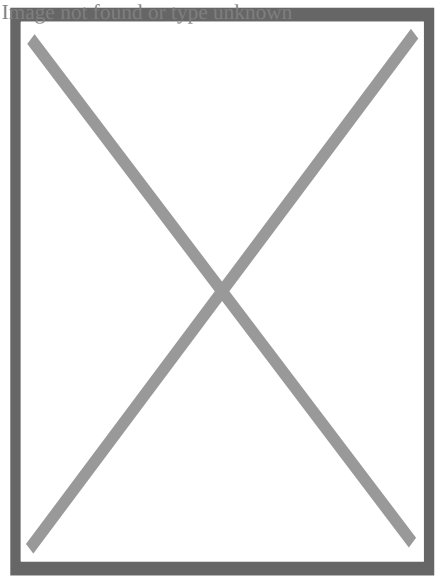

Formwork set for concrete pour.

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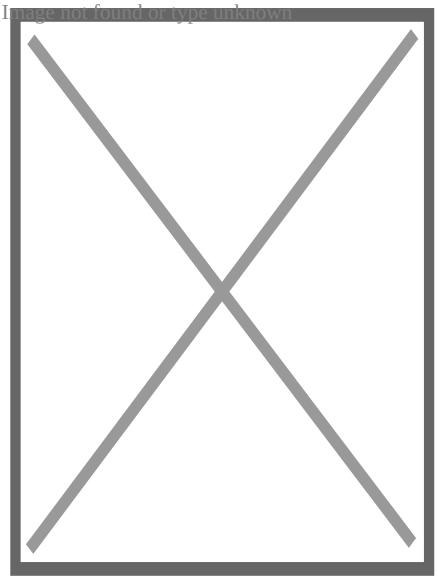

Concrete poured into formwork. This slab is ground-bearing and reinforced with steel rebar.

Design

[edit]
Further information: Marcus' method

Ground-bearing slabs

[edit]
See also: Shallow foundation § Slab on grade

Ground-bearing slabs, also known as "on-ground" or "slab-on-grade", are commonly used for ground floors on domestic and some commercial applications. It is an economical and quick construction method for sites that have non-reactive soil and little slope.[12]

For ground-bearing slabs, it is important to design the slab around the type of soil, since some soils such as clay are too dynamic to support a slab consistently across its entire area. This results in cracking and deformation, potentially leading to structural failure of any members attached to the floor, such as wall studs.[12]

Levelling the site before pouring concrete is an important step, as sloping ground will cause the concrete to cure unevenly and will result in differential expansion. In some cases, a naturally sloping site may be levelled simply by removing soil from the uphill site. If a site has a more significant grade, it may be a candidate for the "cut and fill" method, where soil from the higher ground is removed, and the lower ground is built up with fill.[13]

In addition to filling the downhill side, this area of the slab may be supported on concrete piers which extend into the ground. In this case, the fill material is less important structurally as the dead weight of the slab is supported by the piers. However, the fill material is still necessary to support the curing concrete and its reinforcement.

There are two common methods of filling - *controlled fill* and *rolled fill*.[13]

- **Controlled fill**: Fill material is compacted in several layers by a vibrating plate or roller. Sand fills areas up to around 800 mm deep, and clay may be used to fill areas up to 400 mm deep. However, clay is much more reactive than sand, so it should be used sparingly and carefully. Clay must be moist during compaction to homogenise it.[13]
- **Rolled fill:** Fill is repeatedly compacted by an excavator, but this method of compaction is less effective than a vibrator or roller. Thus, the regulations on maximum depth are typically stricter.

Proper curing of ground-bearing concrete is necessary to obtain adequate strength. Since these slabs are inevitably poured on-site (rather than precast as some suspended slabs are), it can be difficult to control conditions to optimize the curing process. This is usually aided by a membrane, either plastic (temporary) or a liquid compound (permanent).[14]

Ground-bearing slabs are usually supplemented with some form of reinforcement, often steel rebar. However, in some cases such as concrete roads, it is acceptable to use an unreinforced slab if it is adequately engineered (

see below).

Suspended slabs

[edit]

For a suspended slab, there are a number of designs to improve the strength-to-weight ratio. In all cases the top surface remains flat, and the underside is modulated:

- A *corrugated slab* is designed when the concrete is poured into a corrugated steel tray, more commonly called decking. This steel tray improves strength of the slab, and prevents the slab from bending under its own weight. The corrugations run in one direction only.
- A *ribbed slab* gives considerably more strength in one direction. This is achieved with concrete beams bearing load between piers or columns, and thinner, integral ribs in the perpendicular direction. An analogy in carpentry would be a subfloor of bearers and joists. Ribbed slabs have higher load ratings than corrugated or flat slabs, but are inferior

to waffle slabs.[15]

- A *waffle slab* gives added strength in both directions using a matrix of recessed segments beneath the slab.[16] This is the same principle used in the ground-bearing version, the waffle slab foundation. Waffle slabs are usually deeper than ribbed slabs of equivalent strength, and are heavier hence require stronger foundations. However, they provide increased mechanical strength in two dimensions, a characteristic important for vibration resistance and soil movement.[17]

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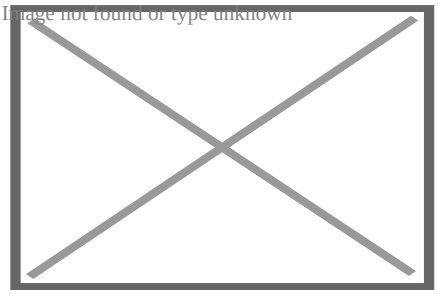


The exposed underside of a waffle slab used in a multi-storey building

Unreinforced slabs

[edit]

Unreinforced or "plain"[18] slabs are becoming rare and have limited practical applications, with one exception being the mud slab (

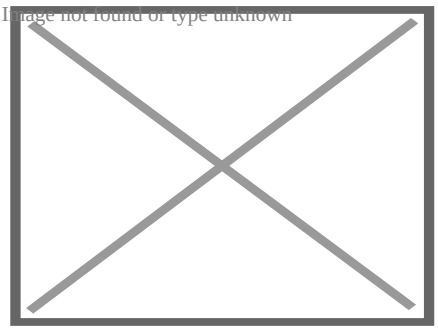
see below). They were once common in the US, but the economic value of reinforced ground-bearing slabs has become more appealing for many engineers.[10] Without reinforcement, the entire load on these slabs is supported by the strength of the concrete, which becomes a vital factor. As a result, any stress induced by a load, static or dynamic, must be within the limit of the concrete's flexural strength to prevent cracking.[19] Since unreinforced concrete is relatively very weak in tension, it is important to consider the effects of tensile stress caused by reactive soil, wind uplift, thermal expansion, and cracking.[20] One of the most common applications for unreinforced slabs is in concrete roads.

Mud slabs

[edit]

Mud slabs, also known as *rat slabs*, are thinner than the more common suspended or ground-bearing slabs (usually 50 to 150 mm), and usually contain no reinforcement.[21] This makes them economical and easy to install for temporary or low-usage purposes such as subfloors,

crawlspaces, pathways, paving, and levelling surfaces.[22] In general, they may be used for any application which requires a flat, clean surface. This includes use as a base or "sub-slab" for a larger structural slab. On uneven or steep surfaces, this preparatory measure is necessary to provide a flat surface on which to install rebar and waterproofing membranes.[10] In this application, a mud slab also prevents the plastic bar chairs from sinking into soft topsoil which can cause spalling due to incomplete coverage of the steel. Sometimes a mud slab may be a substitute for coarse aggregate. Mud slabs typically have a moderately rough surface, finished with a float.[10]



Substrate and rebar prepared for pouring a mud slab

Axes of support

[edit]

One-way slabs

[edit]

A *one-way slab* has moment-resisting reinforcement only in its short axis, and is used when the moment in the long axis is negligible.[23] Such designs include corrugated slabs and ribbed slabs. Non-reinforced slabs may also be considered one-way if they are supported on only two opposite sides (i.e. they are supported in one axis). A one-way reinforced slab may be stronger than a two-way non-reinforced slab, depending on the type of load.

The calculation of reinforcement requirements for a one-way slab can be extremely tedious and time-consuming, and one can never be completely certain of the best design.[*citation needed*] Even minor changes to the project can necessitate recalculation of the reinforcement requirements. There are many factors to consider during the structural structure design of one-way slabs, including:

- Load calculations
- Bending moment calculation
- Acceptable depth of flexure and deflection

- Type and distribution of reinforcing steel

Two-way slabs

[edit]

A *two-way slab* has moment resisting reinforcement in both directions.[24] This may be implemented due to application requirements such as heavy loading, vibration resistance, clearance below the slab, or other factors. However, an important characteristic governing the requirement of a two-way slab is the ratio of the two horizontal lengths. If $\displaystyle L_x$ is the short dimension and $\displaystyle L_y$ is the long dimension, then moment in both directions should be considered in design.[25] In other words, if the axial ratio is greater than two, a two-way slab is required.

A non-reinforced slab is two-way if it is supported in both horizontal axes.

Construction

[edit]

A concrete slab may be prefabricated (precast), or constructed on site.

Prefabricated

[edit]

Prefabricated concrete slabs are built in a factory and transported to the site, ready to be lowered into place between steel or concrete beams. They may be pre-stressed (in the factory), post-stressed (on site), or unstressed.[10] It is vital that the wall supporting structure is built to the correct dimensions, or the slabs may not fit.

On-site

[edit]

On-site concrete slabs are built on the building site using formwork, a type of boxing into which the wet concrete is poured. If the slab is to be reinforced, the rebars, or metal bars, are positioned within the formwork before the concrete is poured in.[26] Plastic-tipped metal or

plastic bar chairs, are used to hold the rebar away from the bottom and sides of the formwork, so that when the concrete sets it completely envelops the reinforcement. This concept is known as concrete cover. For a ground-bearing slab, the formwork may consist only of side walls pushed into the ground. For a suspended slab, the formwork is shaped like a tray, often supported by a temporary scaffold until the concrete sets.

The formwork is commonly built from wooden planks and boards, plastic, or steel. On commercial building sites, plastic and steel are gaining popularity as they save labour.[27] On low-budget or small-scale jobs, for instance when laying a concrete garden path, wooden planks are very common. After the concrete has set the wood may be removed.

Formwork can also be permanent, and remain in situ post concrete pour. For large slabs or paths that are poured in sections, this permanent formwork can then also act as isolation joints within concrete slabs to reduce the potential for cracking due to concrete expansion or movement.

In some cases formwork is not necessary. For instance, a ground slab surrounded by dense soil, brick or block foundation walls, where the walls act as the sides of the tray and hardcore (rubble) acts as the base.

See also

[edit]

- Shallow foundation (Commonly used for ground-bearing slabs)
- Hollow-core slab (Voided slab, one-way spanning)
- Beam and block (voided slab, one way spanning)
- Voided biaxial slab (Voided slab, two-way spanning)
- Formwork
- Precast concrete
- Reinforced concrete
- Rebar
- Concrete cover

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External links

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Wikimedia Commons has media related to ***Concrete slabs***.

- *Concrete Basics: A Guide to Concrete Practice*
- *Super Insulated Slab Foundations*
- *Design of Slabs on Ground* Archived 2021-05-08 at the Wayback Machine

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Concrete

History

- Ancient Roman architecture
- Roman architectural revolution
- Roman concrete
- Roman engineering
- Roman technology

Composition

- Cement
  - Calcium aluminate
  - Energetically modified
  - Portland
  - Rosendale
- Water
- Water–cement ratio
- Aggregate
- Reinforcement
- Fly ash
- Ground granulated blast-furnace slag
- Silica fume
- Metakaolin

Production

- Plant
- Concrete mixer
- Volumetric mixer
- Reversing drum mixer
- Slump test
- Flow table test
- Curing
- Concrete cover
- Cover meter
- Rebar

Construction

- Precast
- Cast-in-place
- Formwork
- Climbing formwork
- Slip forming
- Screed
- Power screed
- Finisher
- Grinder
- Power trowel
- Pump
- Float
- Sealer
- Tremie

Science

- Properties
- Durability
- Degradation
- Environmental impact
- Recycling
- Segregation
- Alkali–silica reaction

Types

- AstroCrete
- Fiber-reinforced
- Filigree
- Foam
- Lunarcrete
- Mass
- Nanoconcrete
- Pervious
- Polished
- Polymer
- Prestressed
- Ready-mix
- Reinforced
- Roller-compacting
- Self-consolidating
- Self-leveling
- Sulfur
- Tabby
- Translucent
- Waste light
- Aerated
  - AAC
  - RAAC

Applications	○ Slab
	  ○ waffle
	  ○ hollow-core
	  ○ voided biaxial
	  ○ slab on grade
	○ Concrete block
	○ Step barrier
	○ Roads
	○ Columns
	○ Structures

Organizations	○ American Concrete Institute ○ Concrete Society ○ Institution of Structural Engineers ○ Indian Concrete Institute ○ Nanocem ○ Portland Cement Association ○ International Federation for Structural Concrete
Standards	○ Eurocode 2 ○ EN 197-1 ○ EN 206-1 ○ EN 10080
See also	○ Hempcrete

○ Image not found or type unknown Category:Concrete

About Cook County

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Things To Do in Cook County

Photo

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Sand Ridge Nature Center

4.8 (96)

Photo

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River Trail Nature Center

4.6 (235)

Photo

Palmisano (Henry) Park

4.7 (1262)

Driving Directions in Cook County

Driving Directions From Palmisano (Henry) Park to

Driving Directions From Lake Katherine Nature Center and Botanic Gardens to

Driving Directions From Navy Pier to

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Reviews for

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Jeffery James

(5)

Very happy with my experience. They were prompt and followed through, and very helpful in fixing the crack in my foundation.

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Sarah McNeily

(5)

USS was excellent. They are honest, straightforward, trustworthy, and conscientious. They thoughtfully removed the flowers and flower bulbs to dig where they needed in the yard, replanted said flowers and spread the extra dirt to fill in an area of the yard. We've had other services from different companies and our yard was really a mess after. They kept the job site meticulously clean. The crew was on time and friendly. I'd recommend them any day! Thanks to Jessie and crew.

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Jim de Leon

(5)

It was a pleasure to work with Rick and his crew. From the beginning, Rick listened to my concerns and what I wished to accomplish. Out of the 6 contractors that quoted the project, Rick seemed the MOST willing to accommodate my wishes. His pricing was definitely more than fair as well. I had 10 push piers installed to stabilize and lift an addition of my house. The project commenced at the date that Rick had disclosed initially and it was completed within the same time period expected (based on Rick's original assessment). The crew was well informed, courteous, and hard working. They were not loud (even while equipment was being utilized) and were well spoken. My neighbors were very impressed on how polite they were when they entered / exited my property (saying hello or good morning each day when they crossed paths). You can tell they care about the customer concerns. They ensured that the property would be put back as clean as possible by placing MANY sheets of plywood down prior to excavating. They compacted the dirt back in the holes extremely well to avoid large stock piles of soils. All the while, the main office was calling me to discuss updates and expectations of completion. They provided waivers of lien, certificates of insurance, properly acquired permits, and JULIE locates. From a construction background, I can tell you that I did not see any flaws in the way they operated and this an extremely professional company. The pictures attached show the push piers added to the foundation (pictures 1, 2 & 3), the amount of excavation (picture 4), and the restoration after dirt was placed back in the pits and compacted (pictures 5, 6 & 7). Please notice that they also sealed two large cracks and steel plated these cracks from expanding further (which you can see under my sliding glass door). I, as well as my wife, are extremely happy that we chose United Structural Systems for our contractor. I would happily tell any of my friends and family to use this contractor should the opportunity arise!

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Chris Abplanalp

(5)

USS did an amazing job on my underpinning on my house, they were also very courteous to the proximity of my property line next to my neighbor. They kept things in order with all the dirt/mud they had to excavate. They were done exactly in the timeframe they indicated, and the contract was very details oriented with drawings of what would be done. Only thing that would have been nice, is they left my concrete a little muddy with boot prints but again, all-in-all a great job

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Dave Kari

(5)

What a fantastic experience! Owner Rick Thomas is a trustworthy professional. Nick and the crew are hard working, knowledgeable and experienced. I interviewed every company in the area, big and small. A homeowner never wants to hear that they have foundation issues. Out of every company, I trusted USS the most, and it paid off in the end. Highly recommend.

Recognizing Shifts in the Home Foundation**View GBP**

Check our other pages :

- **Grasping the Scope of Epoxy Injection Repairs**
- **Selecting Appropriate Methods for Specific Soil Types**
- **Early Indicators of Potential Foundation Damage**

Frequently Asked Questions

What are the common signs of foundation issues?

Common signs include cracks in walls or floors, doors and windows that stick or wont close properly, uneven or sloping floors, and gaps around window frames or doors.

How can I tell if a crack in my wall is due to foundation problems?

Cracks due to foundation issues are often wider than 1/8 inch, may run diagonally, and are typically found near doors and windows or where walls meet the ceiling or floor. Horizontal cracks or stair-step cracks in brickwork are also indicative of foundation problems.

Should I be concerned about small cracks in my drywall?

Small cracks in drywall can be normal due to settling, but if they are accompanied by other signs like sticking doors or uneven floors, it could indicate a foundation issue. Monitor the cracks over time; if they widen or new cracks appear, its worth investigating further.

How often should I inspect my home for foundation problems?

Its recommended to visually inspect your home annually for signs of foundation issues. However, if you live in an area prone to soil movement or have noticed any of the signs mentioned, consider more frequent inspections or consulting a professional.

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